

LABORATORY DATA CONSULTANTS, INC.

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ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

August 17, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on July 29, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #36761:

SDG

Fraction:

K1606023
K1606024
K1606266

Metals, Explosives

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1606023, K1606024, K1606266

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
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Carlsbad, CA 92010

August 17, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), surrogates, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), sample reference materials (SRM), and equipment blanks.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, interference check samples, ICB/CCBs and serial dilution, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the methods were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by ADR with the exception of several metals. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1606266/ 6020A	ICB/CCB	Lead	0.04 ug/L	FTBL-IS-023-060816
K1606266/ 6020A	ICB/CCB	Lead	0.08 ug/L	FTBL-IS-020-060816 FTBL-IS-032-060816 FTBL-IS-022-060816 FTBL-IS-038-060816 FTBL-IS-033-060816 FTBL-IS-046-060816 FTBL-IS-055-060816
K1606266/ 6020A	ICB/CCB	Antimony Lead Nickel	0.007 ug/L 0.005 ug/L 0.06 ug/L	EB060816

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1606266/ 6020A	EB060816	Antimony Nickel	0.007 ug/L 0.04 ug/L	0.012U ug/L 0.05U ug/L

V. Field Blanks

One equipment blank was collected and analyzed for metals and explosives. The equipment blank had detections for several metals. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives, antimony and lead in three MS/MSD pairs. No data were qualified for metals %R when the post-digestion spike %R or serial dilution %D were within QC limits. The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details are provided in Enclosure I.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. Several explosives results in several samples were qualified as rejected (R) due to SRM %Rs grossly outside QC limits (i.e., $\leq 10\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XI. Field Duplicates/Split Samples

No field duplicates were identified in this SDG.

XII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1606023/ 8330B	FTBL-IS-001-060316	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606023/ 8330B	FTBL-IS-005-060316	3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606023/ 8330B	FTBL-IS-004-060316	4-Amino-2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606024/ 8330B	FTBL-IS-007-060216	1,3,5-Trinitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606266/ 8330B	FTBL-IS-022-060816 FTBL-IS-023-060816 FTBL-IS-046-060816	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606266/ 8330B	FTBL-IS-020-060816	2-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to severe SRM %R exceedances, data were qualified as rejected in nineteen samples.

Due to MS/MSD %R and RPDs, data were qualified as estimated in three samples.

Due to results not being confirmed, data were qualified as presumptive in eight samples.

Due to laboratory blank contamination, data were qualified as non-detect in three samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-Jun-2016	FTBL-IS-012-060216	K1606024-002	N	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-012-060216	K1606024-002	N	METHOD	8330B	III
02-Jun-2016	FTBL-IS-011-060216	K1606024-001	N	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-011-060216	K1606024-001	N	METHOD	8330B	III
02-Jun-2016	FTBL-IS-011-060216MS	K1606024-001MS	MS	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-011-060216MSD	K1606024-001SD	MSD	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-011-060216MS	KWG1604780-11	MS	METHOD	8330B	III
02-Jun-2016	FTBL-IS-011-060216MSD	KWG1604780-12	MSD	METHOD	8330B	III
02-Jun-2016	FTBL-IS-010-060216	K1606024-003	N	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-010-060216	K1606024-003	N	METHOD	8330B	III
02-Jun-2016	FTBL-IS-009-060216	K1606024-004	N	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-009-060216	K1606024-004	N	METHOD	8330B	III
02-Jun-2016	FTBL-IS-007-060216	K1606024-006	N	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-007-060216	K1606024-006	N	METHOD	8330B	III
02-Jun-2016	FTBL-IS-008-060216	K1606024-005	N	EPA 3050B	6020A	III
02-Jun-2016	FTBL-IS-008-060216	K1606024-005	N	METHOD	8330B	III
03-Jun-2016	FTBL-IS-006-060316	K1606023-001	N	EPA 3050B	6020A	III
03-Jun-2016	FTBL-IS-006-060316	K1606023-001	N	METHOD	8330B	III
03-Jun-2016	FTBL-IS-006-060316MS	K1606023-001MS	MS	EPA 3050B	6020A	III
03-Jun-2016	FTBL-IS-006-060316MSD	K1606023-001SD	MSD	EPA 3050B	6020A	III
03-Jun-2016	FTBL-IS-006-060316MSD	KWG1604780-10	MSD	METHOD	8330B	III
03-Jun-2016	FTBL-IS-006-060316MS	KWG1604780-9	MS	METHOD	8330B	III
03-Jun-2016	FTBL-IS-005-060316	K1606023-002	N	EPA 3050B	6020A	III
03-Jun-2016	FTBL-IS-005-060316	K1606023-002	N	METHOD	8330B	III
03-Jun-2016	FTBL-IS-004-060316	K1606023-003	N	EPA 3050B	6020A	III
03-Jun-2016	FTBL-IS-004-060316	K1606023-003	N	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Jun-2016	FTBL-IS-002-060316	K1606023-004	N	EPA 3050B	6020A	III
03-Jun-2016	FTBL-IS-002-060316	K1606023-004	N	METHOD	8330B	III
03-Jun-2016	FTBL-IS-001-060316	K1606023-005	N	EPA 3050B	6020A	III
03-Jun-2016	FTBL-IS-001-060316	K1606023-005	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-020-060816	K1606266-002	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-020-060816	K1606266-002	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-023-060816	K1606266-001	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-023-060816	K1606266-001	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-023-060816MS	K1606266-001MS	MS	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-023-060816MSD	K1606266-001SD	MSD	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-023-060816MS	KWG1605065-5	MS	METHOD	8330B	III
08-Jun-2016	FTBL-IS-023-060816MSD	KWG1605065-6	MSD	METHOD	8330B	III
08-Jun-2016	FTBL-IS-032-060816	K1606266-003	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-032-060816	K1606266-003	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-022-060816	K1606266-004	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-022-060816	K1606266-004	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-033-060816	K1606266-006	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-033-060816	K1606266-006	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-038-060816	K1606266-005	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-038-060816	K1606266-005	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-046-060816	K1606266-007	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-046-060816	K1606266-007	N	METHOD	8330B	III
08-Jun-2016	FTBL-IS-055-060816	K1606266-008	N	EPA 3050B	6020A	III
08-Jun-2016	FTBL-IS-055-060816	K1606266-008	N	METHOD	8330B	III
08-Jun-2016	EB060816	K1606266-009	EB	CLFAA	6020A	III
08-Jun-2016	EB060816	K1606266-009	EB	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606023

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-001-060316

Collected: 6/3/2016 4:00:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-001-060316

Collected: 6/3/2016 4:00:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.14	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-001-060316

Collected: 6/3/2016 4:00:00 PM Analysis Type: Initial3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/3/2016 12:45:00

Sample ID: FTBL-IS-002-060316

Collected: PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 1 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606023

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-002-060316		Collected: 6/3/2016 12:45:00 PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-002-060316		Collected: 6/3/2016 12:45:00 PM		Analysis Type: Initial3				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-004-060316		Collected: 6/3/2016 12:30:00 PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 2 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606023

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/3/2016 12:30:00									
Sample ID: FTBL-IS-004-060316			Collected: PM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.016	JN	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

6/3/2016 12:30:00									
Sample ID: FTBL-IS-004-060316			Collected: PM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/3/2016 12:30:00									
Sample ID: FTBL-IS-004-060316			Collected: PM		Analysis Type: Initial3			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/3/2016 10:40:00									
Sample ID: FTBL-IS-005-060316			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.039	JN	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 3 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606023

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-005-060316 Collected: 6/3/2016 10:40:00 AM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-005-060316 Collected: 6/3/2016 10:40:00 AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-006-060316 Collected: 6/3/2016 10:30:00 AM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 4 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606023

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-006-060316 Collected: 6/3/2016 10:30:00 AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-006-060316 Collected: 6/3/2016 10:30:00 AM Analysis Type: Initial3 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

SDG: K1606024

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-007-060216 Collected: 6/2/2016 3:45:00 PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.032	JN	0.081	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 5 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606024

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-007-060216

Collected: 6/2/2016 3:45:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-007-060216

Collected: 6/2/2016 3:45:00 PM Analysis Type: Initial3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-008-060216

Collected: 6/2/2016 4:00:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-008-060216

Collected: 6/2/2016 4:00:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-008-060216

Collected: 6/2/2016 4:00:00 PM Analysis Type: Initial3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 6 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606024

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-008-060216

Collected: 6/2/2016 4:00:00 PM **Analysis Type:** Initial3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-009-060216

Collected: 6/2/2016 2:30:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-009-060216

Collected: 6/2/2016 2:30:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-009-060216

Collected: 6/2/2016 2:30:00 PM **Analysis Type:** Initial3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 7 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606024

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-010-060216

Collected: 6/2/2016 2:10:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-010-060216

Collected: 6/2/2016 2:10:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-010-060216

Collected: 6/2/2016 2:10:00 PM **Analysis Type:** Initial3

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/2/2016 12:15:00

Sample ID: FTBL-IS-011-060216

Collected: PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 8 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606024

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID:FTBL-IS-011-060216			Collected:PM		6/2/2016 12:15:00			Analysis Type:Initial2		Dilution: 1	
Analyte			Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE			0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID:FTBL-IS-011-060216		Collected:PM		6/2/2016 12:15:00				Analysis Type:Initial3		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs		
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs		
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	Lcs		
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs		
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Ms, Lcs		
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs		
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs		
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Ms, Lcs		
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs		
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs		
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Ms, Lcs		
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	Lcs		
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	Lcs		
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs		
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs		

Sample ID: FTBL-IS-012-060216		Collected: PM		6/2/2016 12:00:00				Analysis Type: Initial1		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs		
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs		
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs		
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs		
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs		
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs		
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs		
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs		

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 9 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606024

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/2/2016 12:00:00									
Sample ID: FTBL-IS-012-060216		Collected: PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

6/2/2016 12:00:00									
Sample ID: FTBL-IS-012-060216		Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/2/2016 12:00:00									
Sample ID: FTBL-IS-012-060216		Collected: PM		Analysis Type: Initial3				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

SDG: K1606266

Method Category: METALS

Method: 6020A

Matrix: Soil

6/8/2016 9:35:00 AM									
Sample ID: FTBL-IS-023-060816		Collected: 6/8/2016 9:35:00 AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.456	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ms

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 10 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606266

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB060816

Collected: 6/8/2016 4:30:00 PM Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.007	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
NICKEL	0.04	J	0.05	LOD	0.20	LOQ	ug/L	U	Cb
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-020-060816

Collected: 6/8/2016 9:30:00 AM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-020-060816

Collected: 6/8/2016 9:30:00 AM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.017	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 11 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-022-060816		Collected: 6/8/2016 11:10:00 AM		Analysis Type: Initial1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-022-060816		Collected: 6/8/2016 11:10:00 AM		Analysis Type: Initial2		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.025	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-023-060816		Collected: 6/8/2016 9:35:00 AM		Analysis Type: Initial1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.024	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 12 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-023-060816

Collected: 6/8/2016 9:35:00 AM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-023-060816

Collected: 6/8/2016 9:35:00 AM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/8/2016 11:00:00

Sample ID: FTBL-IS-032-060816

Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 13 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-032-060816 Collected: 6/8/2016 11:00:00 AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-033-060816 Collected: 6/8/2016 1:35:00 PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-033-060816 Collected: 6/8/2016 1:35:00 PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-038-060816 Collected: 6/8/2016 1:38:00 PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 14 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-038-060816

Collected: 6/8/2016 1:38:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-046-060816

Collected: 6/8/2016 3:45:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-046-060816

Collected: 6/8/2016 3:45:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.017	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 15 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-046-060816

Collected: 6/8/2016 3:45:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-055-060816

Collected: 6/8/2016 3:50:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-055-060816

Collected: 6/8/2016 3:50:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 16 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606266

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB060816

Collected: 6/8/2016 4:30:00 PM Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 17 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1606023, K1606024, K1606266

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev,
K1606024_SEDD2A_rev, K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:29:07 AM

ADR version 1.9.0.325

Page 18 of 18

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1606023

Method Blank Outlier Report

Lab Reporting Batch ID: K1606023

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1606549-01	6/17/2016 10:12:00 AM	BERYLLIUM LEAD ZINC	0.006 mg/Kg 0.03 mg/Kg 0.3 mg/Kg	FTBL-IS-001-060316 FTBL-IS-002-060316 FTBL-IS-004-060316 FTBL-IS-005-060316 FTBL-IS-006-060316

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604780-14	6/24/2016 6:31:00 PM	3-NITROTOLUENE	0.069 mg/Kg	FTBL-IS-001-060316 FTBL-IS-002-060316 FTBL-IS-004-060316 FTBL-IS-005-060316 FTBL-IS-006-060316
KWG1604780-15	6/29/2016 3:09:00 AM	2,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene HMX	0.034 mg/Kg 0.016 mg/Kg 0.40 mg/Kg 0.0059 mg/Kg 0.011 mg/Kg	FTBL-IS-001-060316 FTBL-IS-002-060316 FTBL-IS-004-060316 FTBL-IS-005-060316 FTBL-IS-006-060316
KWG1604780-7	6/29/2016 1:56:00 AM	3-NITROTOLUENE	0.26 mg/Kg	FTBL-IS-001-060316 FTBL-IS-002-060316 FTBL-IS-004-060316 FTBL-IS-005-060316 FTBL-IS-006-060316

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-004-060316(Initial1)	4-Amino-2,6-Dinitrotoluene	0.016 mg/Kg	0.016U mg/Kg
FTBL-IS-005-060316(Initial1)	3-NITROTOLUENE	0.039 mg/Kg	0.039U mg/Kg

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:50:42 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606023

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-006-060316MS (Dry) FTBL-IS-006-060316MSD (Dry) (FTBL-IS-006-060316)	ANTIMONY	37	38	72.00-124.00	-	ANTIMONY	No qual, PS = 94%

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-006-060316MS FTBL-IS-006-060316MSD (FTBL-IS-006-060316)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX	78 66 69 58	- 70 71 60	80.00-116.00 79.00-117.00 86.00-118.00 74.00-124.00	- - - -	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:31:50 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606023

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604780-5 (FTBL-IS-001-060316 FTBL-IS-002-060316 FTBL-IS-004-060316 FTBL-IS-005-060316 FTBL-IS-006-060316)	2,4,6-TRINITROTOLUENE NITROBENZENE NITROGLYCERIN	7 3 0	- - -	71.00-120.00 67.00-129.00 73.00-124.00	- - -	2,4,6-TRINITROTOLUENE NITROBENZENE NITROGLYCERIN	J (all detects) R (all non-detects)
KWG1604780-13 KWG1604780-5 (FTBL-IS-001-060316 FTBL-IS-002-060316 FTBL-IS-004-060316 FTBL-IS-005-060316 FTBL-IS-006-060316)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Pentaerythritol Tetranitrate (PETN) RDX Tetryl	47 23 53 50 55 11 42 25 31 29 56 11 66 25	- - - - - - - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 72.00-128.00 67.00-129.00 68.00-135.00	- - - - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Pentaerythritol Tetranitrate (PETN) RDX Tetryl	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:50:27 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606023

Laboratory: ALS_K

EDD Filename: K1606023_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-001-060316	NITROGLYCERIN	JN	0.14	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-004-060316	4-Amino-2,6-Dinitrotoluene	JN	0.016	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-005-060316	3-NITROTOLUENE	JN	0.039	0.082	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:50:49 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36761A4a
 SDG #: K1606023
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/8/16
 Page: 1 of 1
 Reviewer: a
 2nd Reviewer: sm

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-006-060316	K1606023-001	Soil	06/03/16
2	FTBL-IS-005-060316	K1606023-002	Soil	06/03/16
3	FTBL-IS-004-060316	K1606023-003	Soil	06/03/16
4	FTBL-IS-002-060316	K1606023-004	Soil	06/03/16
5	FTBL-IS-001-060316	K1606023-005	Soil	06/03/16
6	FTBL-IS-006-060316MS	K1606023-001MS	Soil	06/03/16
7	FTBL-IS-006-060316MSD	K1606023-001MSD	Soil	06/03/16
8				
9				
10				
11				
12				

Notes:

LDC #: 36761A4/a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 6 of 7

Reviewer: a

2nd reviewer: Sm

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed


LDC #: 36761A4a

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

Page: 6 of 1

Reviewer: a

2nd Reviewer: 

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(M) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

N N/A Were all duplicate sample relative percent differences (RPD) $\leq 20\%$ for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

[illegible]

Comments:

LDC #: 36761A40
SDG #: K1606023
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

Level III AOR

Date: 8/7/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A, A	$RSD \leq 15\%$, r^2 10/15 20/1
III.	Continuing calibration	A	$CCV \leq 20\%$
IV.	Laboratory Blanks	N	
V.	Field blanks		
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		
IX.	Field duplicates		
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data		

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-006-060316	K1606023-001	Soil	06/03/16
2	FTBL-IS-005-060316	K1606023-002	Soil	06/03/16
3	FTBL-IS-004-060316	K1606023-003	Soil	06/03/16
4	FTBL-IS-002-060316	K1606023-004	Soil	06/03/16
5	FTBL-IS-001-060316	K1606023-005	Soil	06/03/16
6	FTBL-IS-006-060316MS	K1606023-001MS	Soil	06/03/16
7	FTBL-IS-006-060316MSD	K1606023-001MSD	Soil	06/03/16
8	FTBL-IS-006-060316DUP	K1606023-001DUP	Soil	06/03/16
9	FTBL-IS-006-060316TRP	K1606023-001TRP	Soil	06/03/16
10				
11				
12				
13				
14				

Notes:

K1606023-001 Storage B			
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VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141 (Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36761A40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: _____

2nd Reviewer:

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y	N	N/A	Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y	N	N/A	Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1606024

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606024

Laboratory: ALS_K

EDD Filename: K1606024_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-011-060216MS (Dry) FTBL-IS-011-060216MSD (Dry) (FTBL-IS-011-060216)	ANTIMONY	44	42	72.00-124.00	-	ANTIMONY	No qual, PS = 95 %

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-011-060216MS FTBL-IS-011-060216MSD (FTBL-IS-011-060216)	2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX	- - 71	76 77 66	79.00-117.00 86.00-118.00 74.00-124.00	- - -	2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:35:31 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606024

Laboratory: ALS_K

EDD Filename: K1606024_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604780-5 KWG1604780-6 (FTBL-IS-007-060216 FTBL-IS-008-060216 FTBL-IS-009-060216 FTBL-IS-010-060216 FTBL-IS-011-060216 FTBL-IS-012-060216)	2,4,6-TRINITROTOLUENE NITROBENZENE NITROGLYCERIN	7 3 0	- - -	71.00-120.00 67.00-129.00 73.00-124.00	- - -	2,4,6-TRINITROTOLUENE NITROBENZENE NITROGLYCERIN	J (all detects) R (all non-detects)
KWG1604780-13 KWG1604780-5 KWG1604780-6 (FTBL-IS-007-060216 FTBL-IS-008-060216 FTBL-IS-009-060216 FTBL-IS-010-060216 FTBL-IS-011-060216 FTBL-IS-012-060216)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Pentaerythritol Tetranitrate (PETN) RDX Tetryl	47 23 53 50 55 11 42 25 31 29 56 11 66 25	- - - - - - - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 72.00-128.00 67.00-129.00 68.00-135.00	- - - - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Pentaerythritol Tetranitrate (PETN) RDX Tetryl	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:51:05 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606024

Laboratory: ALS_K

EDD Filename: K1606024_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-007-060216	1,3,5-TRINITROBENZENE	JN	0.032	0.081	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:51:26 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36761B4a
 SDG #: K1606024
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/18/16
 Page: 1 of 1
 Reviewer: g
 2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-011-060216	K1606024-001	Soil	06/02/16
2	FTBL-IS-012-060216	K1606024-002	Soil	06/02/16
3	FTBL-IS-010-060216	K1606024-003	Soil	06/02/16
4	FTBL-IS-009-060216	K1606024-004	Soil	06/02/16
5	FTBL-IS-008-060216	K1606024-005	Soil	06/02/16
6	FTBL-IS-007-060216	K1606024-006	Soil	06/02/16
7	FTBL-IS-011-060216MS	K1606024-001MS	Soil	06/02/16
8	FTBL-IS-011-060216MSD	K1606024-001MSD	Soil	06/02/16
9				
10				
11				
12				
13				

Notes:

LDC #:

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: of

Reviewer:

2nd reviewer: 

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 36761B49

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

Page: 6 of 11

Reviewer:

2nd Reviewer: 

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y/N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

N N/A Were all duplicate sample relative percent differences (RPD) $\leq 20\%$ for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

[illegible]

Comments:

LDC #: 36761B40
SDG #: K1606024
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

Level III - AOR

Date: 8/1/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A-A	RSO ≤ 15% . ICV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	N	
V.	Field blanks		
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		
IX.	Field duplicates		
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data		

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-011-060216	K1606024-001	Soil	06/02/16
2	FTBL-IS-012-060216	K1606024-002	Soil	06/02/16
3	FTBL-IS-010-060216	K1606024-003	Soil	06/02/16
4	FTBL-IS-009-060216	K1606024-004	Soil	06/02/16
5	FTBL-IS-008-060216	K1606024-005	Soil	06/02/16
6	FTBL-IS-007-060216	K1606024-006	Soil	06/02/16
7	FTBL-IS-011-060216MS	K1606024-001MS	Soil	06/02/16
8	FTBL-IS-011-060216MSD	K1606024-001MSD	Soil	06/02/16
9	FTBL-IS-011-060216DUP	K1606024-001DUP	Soil	06/02/16
10	FTBL-IS-011-060216TRP	K1606024-001TRP	Soil	06/02/16
11				
12				
13				
14				
15				

LDC #: 36761B40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: 2

2nd Reviewer: YV

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N (N/A) Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y N (N/A) Did the relative percent differences of detected compounds between two columns./detectors <40%?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1606266

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606266

Laboratory: ALS_K

EDD Filename: K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-023-060816MS (Dry) FTBL-IS-023-060816MSD (Dry) (FTBL-IS-023-060816)	LEAD	365	412	84.00-118.00	-	LEAD	No Qual, SD = 9.9 %D
FTBL-IS-023-060816MS (Dry) FTBL-IS-023-060816MSD (Dry) (FTBL-IS-023-060816)	ANTIMONY	36	50	72.00-124.00	31.8 (20.00)	ANTIMONY	J(all detects) UJ(all non-detects) No Qual, %R, PS = 109%R

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-023-060816MS (FTBL-IS-023-060816)	3,5-Dinitroaniline	84	-	86.00-118.00	-	3,5-Dinitroaniline	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 11:12:48 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606266

Laboratory: ALS_K

EDD Filename: K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605065-11 (FTBL-IS-020-060816 FTBL-IS-022-060816 FTBL-IS-023-060816 FTBL-IS-032-060816 FTBL-IS-033-060816 FTBL-IS-038-060816 FTBL-IS-046-060816 FTBL-IS-055-060816)	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	7 8 2 0 0	- - - - -	71.00-120.00 70.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00	- - - - -	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J(all detects) R(all non-detects)
KWG1605065-11 KWG1605065-7 (FTBL-IS-020-060816 FTBL-IS-022-060816 FTBL-IS-023-060816 FTBL-IS-032-060816 FTBL-IS-033-060816 FTBL-IS-038-060816 FTBL-IS-046-060816 FTBL-IS-055-060816)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Tetryl	44 21 49 50 53 38 18 26 25 70 27	- - - - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 68.00-135.00	- - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604697-1 KWG1604697-2 (EB060816)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	76 67 76 70 69 61 -	- - - - - - -	78.00-120.00 77.00-127.00 79.00-120.00 73.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00	- 22 (20.00) - 24 (20.00) 21 (20.00) - 22 (20.00)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/16/2016 8:51:44 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606266

Laboratory: ALS_K

EDD Filename: K1606266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-020-060816	2-NITROTOLUENE	JN	0.017	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-022-060816	2,6-DINITROTOLUENE	JN	0.025	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-023-060816	2,6-DINITROTOLUENE	JN	0.024	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-046-060816	2,6-DINITROTOLUENE	JN	0.017	0.041	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB060816	ANTIMONY	J	0.007	0.050	LOQ	ug/L	J (all detects)
	NICKEL	J	0.04	0.20	LOQ	ug/L	
	ZINC	J	0.4	0.5	LOQ	ug/L	

LDC #: 36761C4a
 SDG #: K1606266
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/8/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	EB=9
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-023-060816	K160266-001	Soil	06/08/16
2	FTBL-IS-020-060816	K160266-002	Soil	06/08/16
3	FTBL-IS-032-060816	K160266-003	Soil	06/08/16
4	FTBL-IS-022-060816	K160266-004	Soil	06/08/16
5	FTBL-IS-038-060816	K160266-005	Soil	06/08/16
6	FTBL-IS-033-060816	K160266-006	Soil	06/08/16
7	FTBL-IS-046-060816	K160266-007	Soil	06/08/16
8	FTBL-IS-055-060816	K160266-008	Soil	06/08/16
9	EB060816	K160266-009	Water	06/08/16
10	FTBL-IS-023-060816MS	K160266-001MS	Soil	06/08/16
11	FTBL-IS-023-060816MSD	K160266-001MSD	Soil	06/08/16
12				
13				
14				
15				

LDC #:

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: of

Reviewer:

2nd reviewer:

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dilution

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1

				Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)									
Pb		0.04	0.1										

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 2-8

				Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)									
Pb		0.08	0.2										

Sample Concentration units, unless otherwise noted: 3/L mg/Kg

Associated Samples: 2-8 All water

				Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	9									
Sb		0.007	0.035	0.007 / 0.012									
Pb		0.005	0.025										
Ni		0.06	0.3	0.04 / 0.05									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Q N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y/N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

(Y) N N/A Were all duplicate sample relative percent differences (RPD) $\leq 20\%$ for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

[illegible]

Comments:

LDC #: 36761C40
SDG #: K1606266
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET Level III

Date: 8/3/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A T A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks		
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		
IX.	Field duplicates		
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data		

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-023-060816	K160266-001	Soil	06/08/16
2	FTBL-IS-020-060816	K160266-002	Soil	06/08/16
3	FTBL-IS-032-060816	K160266-003	Soil	06/08/16
4	FTBL-IS-022-060816	K160266-004	Soil	06/08/16
5	FTBL-IS-038-060816	K160266-005	Soil	06/08/16
6	FTBL-IS-033-060816	K160266-006	Soil	06/08/16
7	FTBL-IS-046-060816	K160266-007	Soil	06/08/16
8	FTBL-IS-055-060816	K160266-008	Soil	06/08/16
9	EB060816	K160266-009	Water	06/08/16
10	FTBL-IS-023-060816MS	K160266-001MS	Soil	06/08/16
11	FTBL-IS-023-060816MSD	K160266-001MSD	Soil	06/08/16
12	FTBL-IS-023-060816DUP	K160266-001DUP	Soil	06/08/16
13	FTBL-IS-023-060816TRP	K160266-001TRP	Soil	06/08/16
14				
15				
16				
17				

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenzo(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L.. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O.		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 35761C40

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: Q

2nd Reviewer: DN

METHOD: GC [✓] HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N ~~N/A~~

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

<u>Y</u>	<u>N</u>	<u>N/A</u>
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Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

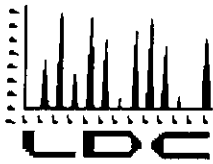
Y N ~~N~~/A

Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

August 24, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 5th & 8th, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #36840:

<u>SDG #</u>	<u>Fraction:</u>
K1606091, K1606204 K1606502, K1606364 K1606639	Metals, Explosives

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

[illegible]

**Data Validation Report
Fort Bliss, Castner Range**

**SDGs: K1606091, K1606204, K1606502, K1606364,
and K1606639**

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

August 24, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), surrogates, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilution, laboratory control sample (LCS), sample reference materials (SRM), and equipment blanks. Approximately 30 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, interference check samples, ICB/CCBs and serial dilution, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the methods were met with the following exceptions:

SDG/ Method	Date	Column	Compound	%D (limits)	Associated Samples	Flag	A or P
K1606502/ 8330B	06/29/16	SynergiHydroR	Tetryl	33 (≤20)	EB061316	UJ (all non-detects)	A

IV. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by ADR with the exception of several metals and explosive. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1606091/ 6020A	ICB/CCB	Antimony Lead Nickel	0.007 ug/L 0.005 ug/L 0.06 ug/L	EB060616
K1606204/ 6020A	ICB/CCB	Antimony Lead Nickel	0.007 ug/L 0.005 ug/L 0.06 ug/L	EB060716
K1606502/ 6020A	ICB/CCB	Antimony Lead Nickel	0.007 ug/L 0.005 ug/L 0.06 ug/L	EB061316

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1606502/ 6020A	ICB/CCB	Beryllium	0.011 ug/L	FTBL-IS-110-061316 FTBL-IS-105-061316 FTBL-IS-106-061316
K1606364/ 6020A	ICB/CCB	Beryllium	0.020 ug/L	FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C FTBL-IS-074-060916-A
K1606364/ 6020A	ICB/CCB	Beryllium	0.011 ug/L	FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-073-060916 FTBL-IS-075-060916 FTBL-IS-071-060916 FTBL-IS-076-060916
K1606364/ 6020A	ICB/CCB	Antimony Lead Nickel	0.007 ug/L 0.005 ug/L 0.06 ug/L	EB060916
K1606639/ 6020A	ICB/CCB	Antimony Lead	0.015 ug/L 0.007 ug/L	FTBL-SP-03-061516 FTBL-SP-03-061516F

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1606091/ 6020A	EB060616	Lead Nickel	0.006 ug/L 0.09 ug/L	0.010U ug/L 0.05U ug/L
K1606204/ 6020A	EB060716	Antimony Lead Nickel	0.012 ug/L 0.011 ug/L 0.05 ug/L	0.012U ug/L 0.011U ug/L 0.05U ug/L
K1606502/ 6020A	EB061316	Lead Nickel	0.009 ug/L 0.07 ug/L	0.010U ug/L 0.07U ug/L

V. Field Blanks

Four equipment blanks were collected and analyzed for metals and explosives. All equipment blanks had detections for several metals. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met. The criteria for analysis were met.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives and metals in four MS/MSD pairs. No data were qualified for metals %R when the post-digestion spike %R or serial dilution %D were within QC limits. The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details are provided in Enclosure I.

IX. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. Several explosives results in several samples were qualified as rejected (R) due to SRM %Rs grossly outside QC limits (i.e., $\leq 10\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XII. Field Triplicates

Three sets of field triplicates were collected and analyzed for explosives and metals. All RSDs were within QC limits with the exception of antimony and lead in two triplicates. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The field triplicate comparisons are provided in Enclosures I and II.

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure

I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1606091/ 8330B	FTBL-IS-003-060616-B	HMX 1,3-Dinitrobenzene 3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606091/ 8330B	FTBL-IS-014-060616	4-Amino-2,6-dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606091/ 8330B	FTBL-IS-018-060616	1,3,5-Trinitrotoluene Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606204/ 8330B	FTBL-IS-027-060716	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606204/ 8330B	FTBL-IS-015-060716 FTBL-IS-019-060716	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606204/ 8330B	FTBL-IS-016-060716 FTBL-IS-021-060716	2,6-Dinitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606364/ 8330B	EB060916	HMX	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606364/ 8330B	FTBL-IS-077-060916-B	2-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606364/ 8330B	FTBL-IS-074-060916-A	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

SDG/ Method	Sample	Compound	RPD	Flag	A or P
K1606364/ 8330B	FTBL-IS-074-060916-A	Nitrobenzene 2-Amino-4,6-dinitrotoluene 2-Nitrotoluene	63.7 125.0 54.5	J (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to severe SRM %R exceedances, data were qualified as rejected in twenty eight samples.

Due to SRM %R exceedances, data were qualified as estimated in twenty eight samples.

Due to MS/MSD and LCS/LCSD %R, data were qualified as estimated in four samples.

Due to results not being confirmed, data were qualified as presumptive in eleven samples.

Due to CCV %D and RPD between columns, data were qualified as estimated in five samples.

Due to field triplicate RSD, data were qualified as estimated in six samples.

Due to results reported below the LOQ, data were qualified as estimated in nine samples.

Due to laboratory blank contamination, data were qualified as non-detect in three samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Jun-2016	EB060616	K1606091-008	EB	CLFAA	6020A	III
06-Jun-2016	EB060616	K1606091-008	EB	METHOD	8330B	III
06-Jun-2016	FTBL-IS-003-060616-A	K1606091-001	FT	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-003-060616-A	K1606091-001	FT	METHOD	8330B	III
06-Jun-2016	FTBL-IS-003-060616-AMS	K1606091-001MS	MS	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-003-060616-AMSD	K1606091-001SD	MSD	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-003-060616-AREP1	KWG1604937-1	REP	METHOD	8330B	III
06-Jun-2016	FTBL-IS-003-060616-AREP3	KWG1604937-2	REP	METHOD	8330B	III
06-Jun-2016	FTBL-IS-003-060616-AMS	KWG1604937-3	MS	METHOD	8330B	III
06-Jun-2016	FTBL-IS-003-060616-AMSD	KWG1604937-4	MSD	METHOD	8330B	III
06-Jun-2016	FTBL-IS-003-060616-B	K1606091-002	N	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-003-060616-B	K1606091-002	N	METHOD	8330B	III
06-Jun-2016	FTBL-IS-003-060616-C	K1606091-003	N	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-003-060616-C	K1606091-003	N	METHOD	8330B	III
06-Jun-2016	FTBL-IS-013-060616	K1606091-004	N	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-013-060616	K1606091-004	N	METHOD	8330B	III
06-Jun-2016	FTBL-IS-018-060616	K1606091-007	N	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-018-060616	K1606091-007	N	METHOD	8330B	III
06-Jun-2016	FTBL-IS-017-060616	K1606091-006	N	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-017-060616	K1606091-006	N	METHOD	8330B	III
06-Jun-2016	FTBL-IS-014-060616	K1606091-005	N	EPA 3050B	6020A	III
06-Jun-2016	FTBL-IS-014-060616	K1606091-005	N	METHOD	8330B	III
07-Jun-2016	EB060716	K1606204-009	EB	CLFAA	6020A	III
07-Jun-2016	EB060716	K1606204-009	EB	METHOD	8330B	III
07-Jun-2016	FTBL-IS-027-060716	K1606204-001	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-027-060716	K1606204-001	N	METHOD	8330B	III

III = Level 3 Data Review N = Normal Sample TB = Trip Blank MS = Matrix Spike DUP = Lab Duplicate
 IV = Level 4 Data Validation FD = Field Duplicate FB = Field Blank MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Jun-2016	FTBL-IS-027-060716MS	K1606204-001MS	MS	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-027-060716MSD	K1606204-001SD	MSD	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-027-060716REP1	KWG1605000-1	REP	METHOD	8330B	III
07-Jun-2016	FTBL-IS-027-060716REP3	KWG1605000-2	REP	METHOD	8330B	III
07-Jun-2016	FTBL-IS-027-060716MS	KWG1605000-5	MS	METHOD	8330B	III
07-Jun-2016	FTBL-IS-027-060716MSD	KWG1605000-6	MSD	METHOD	8330B	III
07-Jun-2016	FTBL-IS-024-060716	K1606204-003	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-024-060716	K1606204-003	N	METHOD	8330B	III
07-Jun-2016	FTBL-IS-026-060716	K1606204-004	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-026-060716	K1606204-004	N	METHOD	8330B	III
07-Jun-2016	FTBL-IS-025-060716	K1606204-002	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-025-060716	K1606204-002	N	METHOD	8330B	III
07-Jun-2016	FTBL-IS-015-060716	K1606204-005	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-015-060716	K1606204-005	N	METHOD	8330B	III
07-Jun-2016	FTBL-IS-016-060716	K1606204-006	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-016-060716	K1606204-006	N	METHOD	8330B	III
07-Jun-2016	FTBL-IS-019-060716	K1606204-007	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-019-060716	K1606204-007	N	METHOD	8330B	III
07-Jun-2016	FTBL-IS-021-060716	K1606204-008	N	EPA 3050B	6020A	III
07-Jun-2016	FTBL-IS-021-060716	K1606204-008	N	METHOD	8330B	III
09-Jun-2016	EB060916	K1606364-011	EB	CLFAA	6020A	III
09-Jun-2016	EB060916	K1606364-011	EB	METHOD	8330B	III
09-Jun-2016	FTBL-IS-077-060916-A	K1606364-001	FT	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-A	K1606364-001	FT	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-077-060916-AMS	K1606364-001MS	MS	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-ARE	K1606364-001RE	N	EPA 3050B	6020A	IV

III = Level 3 Data Review N = Normal Sample TB = Trip Blank MS = Matrix Spike DUP = Lab Duplicate
 IV = Level 4 Data Validation FD = Field Duplicate FB = Field Blank MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Jun-2016	FTBL-IS-077-060916-AMS	K1606364-001REMS	MS	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-AMSD	K1606364-001RES	MSD	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-AMSD	K1606364-001SD	MSD	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-AREP1	KWG1605126-1	REP	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-077-060916-AREP3	KWG1605126-2	REP	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-077-060916-AMS	KWG1605126-5	MS	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-077-060916-AMSD	KWG1605126-6	MSD	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-074-060916-A	K1606364-004	FT	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-074-060916-A	K1606364-004	FT	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-074-060916-ARE	K1606364-004RE	FT	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-B	K1606364-002	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-B	K1606364-002	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-077-060916-BRE	K1606364-002RE	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-074-060916-B	K1606364-005	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-074-060916-B	K1606364-005	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-074-060916-BRE	K1606364-005RE	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-C	K1606364-003	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-077-060916-C	K1606364-003	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-077-060916-CRE	K1606364-003RE	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-074-060916-C	K1606364-006	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-074-060916-C	K1606364-006	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-074-060916-CRE	K1606364-006RE	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-073-060916	K1606364-007	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-073-060916	K1606364-007	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-073-060916RE	K1606364-007RE	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-075-060916	K1606364-008	N	EPA 3050B	6020A	IV

III = Level 3 Data Review
IV = Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

DUP = Lab Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
09-Jun-2016	FTBL-IS-075-060916	K1606364-008	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-075-060916RE	K1606364-008RE	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-071-060916	K1606364-009	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-071-060916	K1606364-009	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-071-060916RE	K1606364-009RE	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-076-060916	K1606364-010	N	EPA 3050B	6020A	IV
09-Jun-2016	FTBL-IS-076-060916	K1606364-010	N	METHOD	8330B	IV
09-Jun-2016	FTBL-IS-076-060916RE	K1606364-010RE	N	EPA 3050B	6020A	IV
13-Jun-2016	EB061316	K1606502-004	EB	CLFAA	6020A	III
13-Jun-2016	EB061316	K1606502-004	EB	METHOD	8330B	III
13-Jun-2016	FTBL-IS-110-061316	K1606502-001	N	EPA 3050B	6020A	III
13-Jun-2016	FTBL-IS-110-061316	K1606502-001	N	METHOD	8330B	III
13-Jun-2016	FTBL-IS-110-061316MS	K1606502-001MS	MS	EPA 3050B	6020A	III
13-Jun-2016	FTBL-IS-110-061316MSD	K1606502-001SD	MSD	EPA 3050B	6020A	III
13-Jun-2016	FTBL-IS-110-061316REP1	KWG1605229-1	REP	METHOD	8330B	III
13-Jun-2016	FTBL-IS-110-061316REP3	KWG1605229-2	REP	METHOD	8330B	III
13-Jun-2016	FTBL-IS-110-061316MS	KWG1605229-5	MS	METHOD	8330B	III
13-Jun-2016	FTBL-IS-110-061316MSD	KWG1605229-6	MSD	METHOD	8330B	III
13-Jun-2016	FTBL-IS-105-061316	K1606502-002	N	EPA 3050B	6020A	III
13-Jun-2016	FTBL-IS-105-061316	K1606502-002	N	METHOD	8330B	III
13-Jun-2016	FTBL-IS-106-061316	K1606502-003	N	EPA 3050B	6020A	III
13-Jun-2016	FTBL-IS-106-061316	K1606502-003	N	METHOD	8330B	III
15-Jun-2016	FTBL-SP-03-061516	K1606639-001	N	CLFAA	6020A	III
15-Jun-2016	FTBL-SP-03-061516	K1606639-001DISS	N	CLFAA	6020A	III
15-Jun-2016	FTBL-SP-03-061516MS	K1606639-001MS	MS	CLFAA	6020A	III
15-Jun-2016	FTBL-SP-03-061516MSD	K1606639-001SD	MSD	CLFAA	6020A	III

III = Level 3 Data Review
IV = Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

DUP = Lab Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606091

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: METALS

Method: 6020A

Matrix: Water

6/6/2016 12:00:0

Sample ID: EB060616 **Collected:** AM **Analysis Type:** Initial/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.09	J	0.05	LOD	0.20	LOQ	ug/L	U	Cb
LEAD	0.006	J	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/6/2016 10:00:0

Sample ID: FTBL-IS-003-060616-A **Collected:** AM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.081	U	0.081	LOD	0.17	LOQ	mg/Kg	UJ	Lcs

6/6/2016 10:00:0

Sample ID: FTBL-IS-003-060616-A **Collected:** AM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.17	U	0.17	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.081	U	0.081	LOD	0.17	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.17	U	0.17	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.041	U	0.041	LOD	0.17	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.41	U	0.41	LOD	0.41	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.041	U	0.041	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.081	U	0.081	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.041	U	0.041	LOD	0.17	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.41	U	0.41	LOD	0.41	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.41	U	0.41	LOD	0.41	LOQ	mg/Kg	R	Lcs
Tetryl	0.17	U	0.17	LOD	0.17	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 1 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606091

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-003-060616-B
 Collected: AM 6/6/2016 10:10:0

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.015	JN	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.0089	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-003-060616-B
 Collected: AM 6/6/2016 10:10:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.020	JN	0.041	LOD	0.082	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg

Sample ID: FTBL-IS-003-060616-C
 Collected: AM 6/6/2016 11:10:0

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-003-060616-C
 Collected: AM 6/6/2016 11:10:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 2 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606091

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-003-060616-C

Collected: AM

6/6/2016 11:10:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-013-060616

Collected: 6/6/2016 1:30:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.041	U	0.041	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.081	U	0.081	LOD	0.17	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-013-060616

Collected: 6/6/2016 1:30:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.17	U	0.17	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.081	U	0.081	LOD	0.17	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.17	U	0.17	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.041	U	0.041	LOD	0.17	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.41	U	0.41	LOD	0.41	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.041	U	0.041	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.081	U	0.081	LOD	0.17	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.041	U	0.041	LOD	0.17	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 3 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606091

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-013-060616

Collected: 6/6/2016 1:30:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.41	U	0.41	LOD	0.41	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.41	U	0.41	LOD	0.41	LOQ	mg/Kg	R	Lcs
Tetryl	0.17	U	0.17	LOD	0.17	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-014-060616

Collected: 6/6/2016 3:20:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-014-060616

Collected: 6/6/2016 3:20:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.017	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-017-060616

Collected: 6/6/2016 3:15:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 4 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606091

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-017-060616

Collected: 6/6/2016 3:15:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-017-060616

Collected: 6/6/2016 3:15:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-018-060616

Collected: 6/6/2016 3:00:00 PM Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-018-060616

Collected: 6/6/2016 3:00:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.027	JN	0.080	LOD	0.080	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 5 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606091

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-018-060616

Collected: 6/6/2016 3:00:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0061	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB060616

Collected: AM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs

SDG: K1606204

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 6 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606204

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB060716 6/7/2016 12:00:00
 Collected: AM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.012	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
COPPER	0.05	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
NICKEL	0.05	J	0.05	LOD	0.20	LOQ	ug/L	U	Cb
ZINC	0.4	J	0.5	LOD	0.5	LOQ	ug/L	J	RI
LEAD	0.011	J	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-015-060716 Collected: 6/7/2016 2:00:00 PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-015-060716 Collected: 6/7/2016 2:00:00 PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.024	JN	0.020	LOD	0.040	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 7 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606204

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-015-060716

Collected: 6/7/2016 2:00:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-016-060716

Collected: 6/7/2016 2:00:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.028	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.065	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-016-060716

Collected: 6/7/2016 2:00:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-019-060716

Collected: 6/7/2016 3:15:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 8 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606204

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-019-060716

Collected: 6/7/2016 3:15:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-019-060716

Collected: 6/7/2016 3:15:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-021-060716

Collected: 6/7/2016 3:25:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-021-060716

Collected: 6/7/2016 3:25:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 9 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606204

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-021-060716

Collected: 6/7/2016 3:25:00 PM Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.022	JN	0.020	LOD	0.040	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.066	JN	0.20	LOD	0.20	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-024-060716

Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-024-060716

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 10 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606204

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/7/2016 10:25:0									
Sample ID: FTBL-IS-024-060716	Collected: AM			Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/7/2016 11:50:0									
Sample ID: FTBL-IS-025-060716	Collected: AM			Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

6/7/2016 11:50:0									
Sample ID: FTBL-IS-025-060716	Collected: AM			Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 11 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606204

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-026-060716

Collected: AM

6/7/2016 11:40:0

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-026-060716

Collected: AM

6/7/2016 11:40:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-027-060716

Collected: AM

6/7/2016 10:05:0

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

Sample ID: FTBL-IS-027-060716

Collected: AM

6/7/2016 10:05:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 12 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606204

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/7/2016 10:05:0

Sample ID: FTBL-IS-027-060716 **Collected:** AM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.10	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJdg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

6/7/2016 12:00:0

Sample ID: EB060716 **Collected:** AM **Analysis Type:** Initial/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs

SDG: K1606364

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 13 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-074-060916-A

Collected: 6/9/2016 9:50:00 AM Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.361	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-074-060916-ARE

Collected: 6/9/2016 9:50:00 AM Analysis Type: Reanalysis-1

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	63.6	J	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

6/9/2016 10:35:0

Sample ID: FTBL-IS-074-060916-B

Collected: AM

Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.470	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft

6/9/2016 10:35:0

Sample ID: FTBL-IS-074-060916-BRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	89.1	J	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

6/9/2016 11:20:0

Sample ID: FTBL-IS-074-060916-C

Collected: AM

Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.920	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft

6/9/2016 11:20:0

Sample ID: FTBL-IS-074-060916-CRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	146	J	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-077-060916-A

Collected: 6/9/2016 9:40:00 AM Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	40.4	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 14 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606364

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-077-060916-ARE

Collected: 6/9/2016 9:40:00 AM **Analysis Type:** Reanalysis-1

Dilution: 50.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	1070	J	0.50	LOD	0.50	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-077-060916-B

Collected: 6/9/2016 10:30:00 AM

Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	14.1	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-077-060916-BRE

Collected: 6/9/2016 10:30:00 AM

Analysis Type: Reanalysis-1

Dilution: 50.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	552	J	0.50	LOD	0.50	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-077-060916-C

Collected: 6/9/2016 11:15:00 AM

Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	50.4	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-077-060916-CRE

Collected: 6/9/2016 11:15:00 AM

Analysis Type: Reanalysis-1

Dilution: 50.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	1320	J	0.50	LOD	0.50	LOQ	mg/Kg	J	Ft

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB060916

Collected: 6/9/2016 12:00:00 PM

Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.015	J	0.010	LOD	0.020	LOQ	ug/L	U	Cb
NICKEL	0.22	=	0.05	LOD	0.20	LOQ	ug/L	U	Cb
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 15 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606364

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-071-060916

Collected: 6/9/2016 3:35:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-071-060916

Collected: 6/9/2016 3:35:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-073-060916

Collected: 6/9/2016 2:15:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 16 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606364

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-073-060916

Collected: 6/9/2016 2:15:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-073-060916

Collected: 6/9/2016 2:15:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-074-060916-A

Collected: 6/9/2016 9:50:00 AM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-074-060916-A

Collected: 6/9/2016 9:50:00 AM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.015	J	0.041	LOD	0.041	LOQ	mg/Kg	J	RI, Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.025	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJdg
2-AMINO-4,6-DINITROTOLUENE	0.012	JP	0.021	LOD	0.041	LOQ	mg/Kg	J	RI, Lcs, ProfJdg
2-NITROTOLUENE	0.021	JP	0.021	LOD	0.081	LOQ	mg/Kg	J	RI, Lcs, ProfJdg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 17 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-074-060916-A

Collected: 6/9/2016 9:50:00 AM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.0080	JN	0.021	LOD	0.081	LOQ	mg/Kg	J	RI, Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.0086	J	0.021	LOD	0.041	LOQ	mg/Kg	J	RI, Lcs
NITROBENZENE	0.0093	JP	0.021	LOD	0.081	LOQ	mg/Kg	J	RI, Lcs, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/9/2016 10:35:0

Sample ID: FTBL-IS-074-060916-B

Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/9/2016 10:35:0

Sample ID: FTBL-IS-074-060916-B

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 18 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-074-060916-B
 Collected: 6/9/2016 10:35:0 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-074-060916-C
 Collected: 6/9/2016 11:20:0 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-074-060916-C
 Collected: 6/9/2016 11:20:0 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-075-060916

Collected: 6/9/2016 2:25:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 19 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-075-060916

Collected: 6/9/2016 2:25:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
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Sample ID: FTBL-IS-075-060916

Collected: 6/9/2016 2:25:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-076-060916

Collected: 6/9/2016 3:40:00 PM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-076-060916

Collected: 6/9/2016 3:40:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 20 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-076-060916

Collected: 6/9/2016 3:40:00 PM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-077-060916-A

Collected: 6/9/2016 9:40:00 AM **Analysis Type:** Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-077-060916-A

Collected: 6/9/2016 9:40:00 AM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-NITROTOLUENE	0.014	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Ms, Lcs, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 21 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-077-060916-A

Collected: 6/9/2016 9:40:00 AM **Analysis Type:** Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

6/9/2016 10:30:0

Sample ID: FTBL-IS-077-060916-B

Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/9/2016 10:30:0

Sample ID: FTBL-IS-077-060916-B

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 22 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/9/2016 10:30:0
Sample ID: FTBL-IS-077-060916-B **Collected:** AM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
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6/9/2016 11:15:0
Sample ID: FTBL-IS-077-060916-C **Collected:** AM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/9/2016 11:15:0
Sample ID: FTBL-IS-077-060916-C **Collected:** AM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 23 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606364

Method Category: SVOA

Method: 8330B

Matrix: Water

6/9/2016 12:00:0

Sample ID: EB060916 **Collected:** AM **Analysis Type:** Initial/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
HMX	0.038	JN	0.10	LOD	0.10	LOQ	ug/L	NJ	RI, Lcs, ProfJudg
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs

SDG: K1606502

Method Category: METALS

Method: 6020A

Matrix: Water

6/13/2016 12:00:0

Sample ID: EB061316 **Collected:** AM **Analysis Type:** Initial/TOT **Dilution:** 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
NICKEL	0.07	J	0.05	LOD	0.20	LOQ	ug/L	U	Cb
LEAD	0.009	J	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/13/2016 1:00:0

Sample ID: FTBL-IS-105-061316 **Collected:** PM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs

6/13/2016 1:00:0

Sample ID: FTBL-IS-105-061316 **Collected:** PM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 24 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606502

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-105-061316

Collected: PM

6/13/2016 1:00:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-106-061316

Collected: PM

6/13/2016 3:25:0

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 25 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev
 SDG: K1606502

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-106-061316		6/13/2016 3:25:00 Collected: PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-106-061316		6/13/2016 3:25:00 Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-110-061316		6/13/2016 11:35 Collected: AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-110-061316		6/13/2016 11:35 Collected: AM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Ms, Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 26 of 28

Data Qualifier Summary

K1606502, K1606639
 EDD Filename: K1606091_SEDD2A_rev,
 K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
 K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606502

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-110-061316

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB061316

Collected: AM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs
Tetryl	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Ccv

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 27 of 28

Data Qualifier Summary

K1606502, K1606639
EDD Filename: K1606091_SEDD2A_rev,
K1606204_SEDD2A_rev, K1606364_SEDD2A_rev,
K1606502_SEDD2A_rev, K1606639_SEDD2A_rev

Laboratory: ALS_K
eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
Ft	Field Triplicate Precision
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
Surr	Surrogate/Tracer Recovery Lower Estimation

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/24/2016 9:32:20 AM

ADR version 1.9.0.325

Page 28 of 28

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1606091

Method Blank Outlier Report

Lab Reporting Batch ID: K1606091

Laboratory: ALS_K

EDD Filename: K1606091_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1606738-04	6/28/2016 9:31:00 AM	ZINC	0.3 mg/Kg	FTBL-IS-003-060616-A FTBL-IS-003-060616-B FTBL-IS-003-060616-C FTBL-IS-013-060616 FTBL-IS-014-060616 FTBL-IS-017-060616 FTBL-IS-018-060616

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604937-8	7/23/2016 1:21:00 AM	1,3-DINITROBENZENE NITROGLYCERIN	0.013 mg/Kg 0.11 mg/Kg	FTBL-IS-003-060616-A FTBL-IS-003-060616-B FTBL-IS-003-060616-C FTBL-IS-013-060616 FTBL-IS-014-060616 FTBL-IS-017-060616 FTBL-IS-018-060616

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-003-060616-B(Initial1)	1,3-DINITROBENZENE	0.015 mg/Kg	0.015U mg/Kg

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604697-3	6/24/2016 7:03:00 AM	2,6-DINITROTOLUENE	0.058 ug/L	EB060616

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 12:57:15 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606091

Laboratory: ALS_K

EDD Filename: K1606091_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-003-060616-AMS (Dry) FTBL-IS-003-060616-AMSD (Dry) (FTBL-IS-003-060616-A)	ANTIMONY	45	44	72.00-124.00	-	ANTIMONY	No Qual Post Spike within limits

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-003-060616-AMSD (FTBL-IS-003-060616-A)	3,5-Dinitroaniline	-	84	86.00-118.00	-	3,5-Dinitroaniline	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:03:57 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606091

Laboratory: ALS_K

EDD Filename: K1606091_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604937-7 (FTBL-IS-003-060616-A FTBL-IS-003-060616-B FTBL-IS-003-060616-C FTBL-IS-013-060616 FTBL-IS-014-060616 FTBL-IS-017-060616 FTBL-IS-018-060616)	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	8 9 1 6 7	- - - - -	71.00-120.00 70.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00	- - - - -	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J(all detects) R(all non-detects)
KWG1604937-7 (FTBL-IS-003-060616-A FTBL-IS-003-060616-B FTBL-IS-003-060616-C FTBL-IS-013-060616 FTBL-IS-014-060616 FTBL-IS-017-060616 FTBL-IS-018-060616)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE Tetryl	45 23 52 54 59 44 18 30 26 26	- - - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 68.00-135.00	- - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604697-1 KWG1604697-2 (EB060616)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	76 67 76 70 69 61 -	- - - - - - -	78.00-120.00 77.00-127.00 79.00-120.00 73.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00	- 22 (20.00) - 24 (20.00) 21 (20.00) - 22 (20.00)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 12:57:22 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1606091

Laboratory: ALS_K

EDD Filename: K1606091_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-003-060616-A	FTBL- IS-003-060616-B	FTBL- IS-003-060616-C			
ANTIMONY	0.329	0.391	0.371	8.7	20.00	No Qualifiers Applied
ARSENIC	6.52	6.79	6.79	2.33	20.00	
BERYLLIUM	0.864	0.916	0.877	3.06	20.00	
COPPER	22.6	23.2	20.8	5.63	20.00	
LEAD	42.8	40.8	36.0	8.77	20.00	
NICKEL	9.64	10.1	9.82	2.35	20.00	
ZINC	59.3	62.5	57.6	4.16	20.00	

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-003-060616-A	FTBL- IS-003-060616-B	FTBL- IS-003-060616-C			
1,3-DINITROBENZENE	0.081 U	0.015	0.041 U	NC	20.00	No Qualifiers Applied
3-NITROTOLUENE	0.081 U	0.020	0.041 U	NC	20.00	
HMX	0.041 U	0.0089	0.021 U	NC	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:02:56 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606091

Laboratory: ALS_K

EDD Filename: K1606091_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-003-060616-B	1,3-DINITROBENZENE	JN	0.015	0.041	LOQ	mg/Kg	J (all detects)
	3-NITROTOLUENE	JN	0.020	0.082	LOQ	mg/Kg	
	HMX	JN	0.0089	0.041	LOQ	mg/Kg	
FTBL-IS-014-060616	4-Amino-2,6-Dinitrotoluene	JN	0.017	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-018-060616	1,3,5-TRINITROBENZENE	JN	0.027	0.080	LOQ	mg/Kg	J (all detects)
	NITROBENZENE	JN	0.0061	0.080	LOQ	mg/Kg	

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB060616	LEAD	J	0.006	0.020	LOQ	ug/L	J (all detects)
	NICKEL	J	0.09	0.20	LOQ	ug/L	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 12:57:24 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36840A4a
 SDG #: K1606091
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 7/1/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	EB=8
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (Sb, no equal PS in limits)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	(1, 2, 3)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data		

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-003-060616-A	K1606091-001	Soil	06/06/16
2	FTBL-IS-003-060616-B	K1606091-002	Soil	06/06/16
3	FTBL-IS-003-060616-C	K1606091-003	Soil	06/06/16
4	FTBL-IS-013-060616	K1606091-004	Soil	06/06/16
5	FTBL-IS-014-060616	K1606091-005	Soil	06/06/16
6	FTBL-IS-017-060616	K1606091-006	Soil	06/06/16
7	FTBL-IS-018-060616	K1606091-007	Soil	06/06/16
8	EB060616	K1606091-008	Water	06/06/16
9	FTBL-IS-003-060616-AMS	K1606091-001MS	Soil	06/06/16
10	FTBL-IS-003-060616-AMSD	K1606091-001MSD	Soil	06/06/16
11				
12				
13				

Notes: _____

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 36840A4a

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: am

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: _____

2nd Reviewer: sm

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All water

				Sample Identification										
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	8										
Sb		0.007	0.035											
Pb		0.005	0.025	0.006 / 0.010										
Ni		0.06	0.3	0.09 / 0.05										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36840A40
 SDG #: K1606091
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/10/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	W	TR = 1+2+3
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-003-060616-A	K1606091-001	Soil	06/06/16
2	FTBL-IS-003-060616-B	K1606091-002	Soil	06/06/16
3	FTBL-IS-003-060616-C	K1606091-003	Soil	06/06/16
4	FTBL-IS-013-060616	K1606091-004	Soil	06/06/16
5	FTBL-IS-014-060616	K1606091-005	Soil	06/06/16
6	FTBL-IS-017-060616	K1606091-006	Soil	06/06/16
7	FTBL-IS-018-060616	K1606091-007	Soil	06/06/16
8	EB060616	K1606091-008	Water	06/06/16
9	FTBL-IS-003-060616-AMS	K1606091-001MS	Soil	06/06/16
10	FTBL-IS-003-060616-AMSD	K1606091-001MSD	Soil	06/06/16
11	FTBL-IS-003-060616-ADUP	K1606091-001DUP	Soil	06/06/16
12	FTBL-IS-003-060616-ATRP	K1606091-001TRP	Soil	06/06/16
13				
14				
15				
16				
17				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes:

LDC#: 36840A40**VALIDATION FINDINGS WORKSHEET**
Field TriplicatesPage: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]**METHOD:** Explosives (EPA SW846 Method 8330B)Y N NA

Were lab triplicates sets identified in this SDG?

Y N NA

Were target analytes detected in the field triplicate sets?

Compound	Concentration (mg/kg)			RSD (≤20%)	Qual
	1	2	3		
A	0.041U	0.0089	0.021U	69	NQ
D	0.081U	0.015	0.041U	73	NQ
M	0.081U	0.020	0.041U	65	NQ

NQ = One or two results were < 5x the Limit of Quantitation (LOQ), therefore no data were qualified.

V:\FIELD REPLICATES\36840A40_Arcadis.wpd

Quality Control Outlier Reports

K1606204

Method Blank Outlier Report

Lab Reporting Batch ID: K1606204

Laboratory: ALS_K

EDD Filename: K1606204_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1606863-01	6/28/2016 10:42:00 AM	LEAD	0.02 mg/Kg	FTBL-IS-015-060716 FTBL-IS-016-060716 FTBL-IS-019-060716 FTBL-IS-021-060716 FTBL-IS-024-060716 FTBL-IS-025-060716 FTBL-IS-026-060716 FTBL-IS-027-060716

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605000-4	7/22/2016 5:30:00 PM	3-NITROTOLUENE	0.085 mg/Kg	FTBL-IS-015-060716 FTBL-IS-016-060716 FTBL-IS-019-060716 FTBL-IS-021-060716 FTBL-IS-024-060716 FTBL-IS-025-060716 FTBL-IS-026-060716 FTBL-IS-027-060716

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604697-3	6/24/2016 7:03:00 AM	2,6-DINITROTOLUENE	0.058 ug/L	EB060716

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:07:45 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606204

Laboratory: ALS_K

EDD Filename: K1606204_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-027-060716MS (Dry) FTBL-IS-027-060716MSD (Dry) (FTBL-IS-027-060716)	ANTIMONY	35	35	72.00-124.00	-	ANTIMONY	No Qual, Post Spike In

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-027-060716MS FTBL-IS-027-060716MSD (FTBL-IS-027-060716)	1,3,5-TRINITROBENZENE	-	73	80.00-116.00	-	1,3,5-TRINITROBENZENE	J(all detects) UJ(all non-detects)
	2,6-DINITROTOLUENE	-	77	79.00-117.00	-	2,6-DINITROTOLUENE	
	2-NITROTOLUENE	-	63	70.00-124.00	-	2-NITROTOLUENE	
	3,5-Dinitroaniline	79	70	86.00-118.00	-	3,5-Dinitroaniline	
	3-NITROTOLUENE	-	66	67.00-129.00	-	3-NITROTOLUENE	
	4-NITROTOLUENE	-	67	71.00-124.00	-	4-NITROTOLUENE	
	HMX	69	61	74.00-124.00	-	HMX	
	NITROBENZENE	-	65	67.00-129.00	-	NITROBENZENE	
	RDX	-	63	67.00-129.00	-	RDX	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:10:38 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606204

Laboratory: ALS_K

EDD Filename: K1606204_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605000-3 (FTBL-IS-015-060716 FTBL-IS-016-060716 FTBL-IS-019-060716 FTBL-IS-021-060716 FTBL-IS-024-060716 FTBL-IS-025-060716 FTBL-IS-026-060716 FTBL-IS-027-060716)	2,4,6-TRINITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	7 3 0 0	- - - -	71.00-120.00 67.00-129.00 73.00-124.00 72.00-128.00	- - - -	2,4,6-TRINITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J(all detects) R(all non-detects)
KWG1605000-3 KWG1605000-7 (FTBL-IS-015-060716 FTBL-IS-016-060716 FTBL-IS-019-060716 FTBL-IS-021-060716 FTBL-IS-024-060716 FTBL-IS-025-060716 FTBL-IS-026-060716 FTBL-IS-027-060716)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Tetryl	43 21 49 51 53 10 38 21 27 28 70 27	- - - - - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 68.00-135.00	- - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604697-1 KWG1604697-2 (EB060716)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	76 67 76 70 69 61 -	- - - - - - -	78.00-120.00 77.00-127.00 79.00-120.00 73.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00	- 22 (20.00) - 24 (20.00) 21 (20.00) - 22 (20.00)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:07:52 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606204

Laboratory: ALS_K

EDD Filename: K1606204_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-015-060716	2,6-DINITROTOLUENE	JN	0.024	0.040	LOQ	mg/Kg	J (all detects)
FTBL-IS-016-060716	2,6-DINITROTOLUENE	JN	0.028	0.041	LOQ	mg/Kg	J (all detects)
	NITROGLYCERIN	JN	0.065	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-019-060716	2,6-DINITROTOLUENE	JN	0.021	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-021-060716	2,6-DINITROTOLUENE	JN	0.022	0.040	LOQ	mg/Kg	J (all detects)
	NITROGLYCERIN	JN	0.066	0.20	LOQ	mg/Kg	J (all detects)
FTBL-IS-027-060716	NITROGLYCERIN	JN	0.10	0.21	LOQ	mg/Kg	J (all detects)

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB060716	ANTIMONY	J	0.012	0.050	LOQ	ug/L	J (all detects)
	COPPER	J	0.05	0.10	LOQ	ug/L	
	LEAD	J	0.011	0.020	LOQ	ug/L	
	NICKEL	J	0.05	0.20	LOQ	ug/L	
	ZINC	J	0.4	0.5	LOQ	ug/L	

LDC #: 36840B4a
SDG #: K1606204
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/16
Page: 1 of 1
Reviewer: g
2nd Reviewer: sm

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (10/11) = SB no qual - PS in lim. 45
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-027-060716	K1606204-001	Soil	06/07/16
2	FTBL-IS-025-060716	K1606204-002	Soil	06/07/16
3	FTBL-IS-024-060716	K1606204-003	Soil	06/07/16
4	FTBL-IS-026-060716	K1606204-004	Soil	06/07/16
5	FTBL-IS-015-060716	K1606204-005	Soil	06/07/16
6	FTBL-IS-016-060716	K1606204-006	Soil	06/07/16
7	FTBL-IS-019-060716	K1606204-007	Soil	06/07/16
8	FTBL-IS-021-060716	K1606204-008	Soil	06/07/16
9	EB060716	K1606204-009	Water	06/07/16
10	FTBL-IS-027-060716MS	K1606204-001MS	Soil	06/07/16
11	FTBL-IS-027-060716MSD	K1606204-001MSD	Soil	06/07/16
12				
13				
14				

Notes:

LDC #: 3684034

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: 02

2nd reviewer: SA

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: _____

Sample Concentration units, unless otherwise noted: _____ ug/L

Associated Samples: _____ All water

				Sample Identification										
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	9										
Sb		0.007	0.035	0.012										
Pb		0.005	0.025	0.011										
Ni		0.06	0.3	0.05										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36840B40
 SDG #: K1606204
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/10/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A, A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-027-060716	K1606204-001	Soil	06/07/16
2	FTBL-IS-025-060716	K1606204-002	Soil	06/07/16
3	FTBL-IS-024-060716	K1606204-003	Soil	06/07/16
4	FTBL-IS-026-060716	K1606204-004	Soil	06/07/16
5	FTBL-IS-015-060716	K1606204-005	Soil	06/07/16
6	FTBL-IS-016-060716	K1606204-006	Soil	06/07/16
7	FTBL-IS-019-060716	K1606204-007	Soil	06/07/16
8	FTBL-IS-021-060716	K1606204-008	Soil	06/07/16
9	EB060716	K1606204-009	Water	06/07/16
10	FTBL-IS-027-060716MS	K1606204-001MS	Soil	06/07/16
11	FTBL-IS-027-060716MSD	K1606204-001MSD	Soil	06/07/16
12	FTBL-IS-027-060716DUP	K1606204-001DUP	Soil	06/07/16
13	FTBL-IS-027-060716TRP	K1606204-001TRP	Soil	06/07/16
14				
15				
16				
17				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36840B40

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: _____

2nd Reviewer: SMMETHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D OnlyY N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?Y N N/A Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings below.

#	Compound Name	Sample ID	%RPD Between Two Columns/Detectors Limit ($\leq 40\%$)	Qualifications
	<u>D</u>	<u>1</u>	<u>not confirmed</u>	<u>NJ Ret 1/A</u>
	<u>K</u>	<u>5</u>		
	<u>K, O</u>	<u>6</u>		
	<u>K</u>	<u>7</u>		
	<u>K, O</u>	<u>8</u>		

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1606502

Method Blank Outlier Report

Lab Reporting Batch ID: K1606502

Laboratory: ALS_K

EDD Filename: K1606502_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607933-01	7/26/2016 5:52:00 PM	BERYLLIUM	0.011 mg/Kg	FTBL-IS-105-061316 FTBL-IS-106-061316 FTBL-IS-110-061316

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605229-4	7/18/2016 9:36:00 AM	2,6-DINITROTOLUENE 2-NITROTOLUENE	0.025 mg/Kg 0.014 mg/Kg	FTBL-IS-105-061316 FTBL-IS-106-061316 FTBL-IS-110-061316

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604920-3	6/29/2016 9:11:00 AM	Pentaerythritol Tetranitrate (PETN)	1.5 ug/L	EB061316

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:12:39 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606502

Laboratory: ALS_K

EDD Filename: K1606502_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-110-061316MS (Dry) FTBL-IS-110-061316MSD (Dry) (FTBL-IS-110-061316)	LEAD	18	13	84.00-118.00	-	LEAD	No Qual Serial Dilution In
FTBL-IS-110-061316MS (Dry) FTBL-IS-110-061316MSD (Dry) (FTBL-IS-110-061316)	ANTIMONY	43	41	72.00-124.00	-	ANTIMONY	No Qual, Post Spike In

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-110-061316MS FTBL-IS-110-061316MSD (FTBL-IS-110-061316)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 4-Amino-2,6-Dinitrotoluene NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	153 148 157 150 138 148 161 143	- - - - - - - -	73.00-119.00 71.00-120.00 75.00-121.00 71.00-123.00 64.00-127.00 73.00-124.00 72.00-128.00 68.00-135.00	66 (20.00) 66 (20.00) 65 (20.00) 64 (20.00) 63 (20.00) 64 (20.00) 66 (20.00) 65 (20.00)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLU 4-Amino-2,6-Dinitrotoluene NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	J(all detects)
FTBL-IS-110-061316MS FTBL-IS-110-061316MSD (FTBL-IS-110-061316)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline HMX RDX	150 152 61 136 128 -	76 78 - 71 66 65	80.00-116.00 79.00-117.00 70.00-124.00 86.00-118.00 74.00-124.00 67.00-129.00	67 (20.00) 66 (20.00) 22 (20.00) 64 (20.00) 65 (20.00) 67 (20.00)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline HMX RDX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:14:36 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606502

Laboratory: ALS_K

EDD Filename: K1606502_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605229-3 (FTBL-IS-105-061316 FTBL-IS-106-061316 FTBL-IS-110-061316)	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	5 2 5 1 0 6	- - - - - -	71.00-120.00 70.00-124.00 67.00-129.00 67.00-129.00 73.00-124.00 72.00-128.00	- - - - - -	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J(all detects) R(all non-detects)
KWG1605229-3 KWG1605229-7 (FTBL-IS-105-061316 FTBL-IS-106-061316 FTBL-IS-110-061316)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX RDX Tetryl	38 19 42 42 48 36 25 12 66 66 21	- - - - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 86.00-118.00 84.00-127.00 71.00-124.00 74.00-124.00 67.00-129.00 68.00-135.00	- - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX RDX Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604920-1 KWG1604920-2 (EB061316)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	- 76 - - 63 77 68 - 69 - 67 64 - -	68 66 64 69 58 65 61 64 60 66 60 54 69 72	73.00-125.00 78.00-120.00 71.00-123.00 78.00-120.00 77.00-127.00 79.00-120.00 70.00-127.00 71.00-117.00 73.00-125.00 76.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00 73.00-127.00	- - - - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:12:46 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606502

Laboratory: ALS_K

EDD Filename: K1606502_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB061316	COPPER	J	0.07	0.10	LOQ	ug/L	J (all detects)
	LEAD	J	0.009	0.020	LOQ	ug/L	
	NICKEL	J	0.07	0.20	LOQ	ug/L	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:12:48 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36840D4a
 SDG #: K1606502
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/11/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	EB=4
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (5/6: Sb-noqual, Pb-in)
VIII.	Duplicate sample analysis	N	Pb-noqual, SO in)
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-110-061316	K1606502-001	Soil	06/13/16
2	FTBL-IS-105-061316	K1606502-002	Soil	06/13/16
3	FTBL-IS-106-061316	K1606502-003	Soil	06/13/16
4	EB061316	K1606502-004	Water	06/13/16
5	FTBL-IS-110-061316MS	K1606502-001MS	Soil	06/13/16
6	FTBL-IS-110-061316MSD	K1606502-001MSD	Soil	06/13/16
7				
8				
9				
10				
11				
12				

Notes:

LDC #:

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: 02

2nd reviewer: SM

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: *CS*

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5xdil

2nd Reviewer: *JS*

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All water

				Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	4									
Sb		0.007	0.035										
Pb		0.005	0.025	0.009 / 0.010									
Ni		0.06	0.3	0.07									

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All soil

				Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	no quals (>5x)									
Be		0.011	0.0275										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36840D40
 SDG #: K1606502
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/10/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A, A	
III.	Continuing calibration	M	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-110-061316	K1606502-001	Soil	06/13/16
2	FTBL-IS-105-061316	K1606502-002	Soil	06/13/16
3	FTBL-IS-106-061316	K1606502-003	Soil	06/13/16
4	EB061316	K1606502-004	Water	06/13/16
5	FTBL-IS-110-061316MS	K1606502-001MS	Soil	06/13/16
6	FTBL-IS-110-061316MSD	K1606502-001MSD	Soil	06/13/16
7	FTBL-IS-110-061316DUP	K1606502-001DUP	Soil	06/13/16
8	FTBL-IS-110-061316TRP	K1606502-001TRP	Soil	06/13/16
9				
10				
11				
12				
13				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36840040

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

Page: / of /

Reviewer:

METHOD: GC / HPLC

2nd Reviewer: 5

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y M N/A Were continuing calibration standards analyzed at the required frequencies?

Y/N N/A Did the continuing calibration standards meet the %D validation criteria of $\leq 20.0\%$?

~~Level IV Only~~

Y/N(N/A) Were the retention times for all calibrated compounds within their respective acceptance windows?

[illegible]

Quality Control Outlier Reports

K1606364

Method Blank Outlier Report

Lab Reporting Batch ID: K1606364

Laboratory: ALS_K

EDD Filename: K1606364_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607968-01RE	7/27/2016 10:14:00 AM	LEAD	0.05 mg/Kg	FTBL-IS-071-060916 FTBL-IS-071-060916RE FTBL-IS-073-060916 FTBL-IS-073-060916RE FTBL-IS-074-060916-A FTBL-IS-074-060916-ARE FTBL-IS-074-060916-B FTBL-IS-074-060916-BRE FTBL-IS-074-060916-C FTBL-IS-074-060916-CRE FTBL-IS-075-060916 FTBL-IS-075-060916RE FTBL-IS-076-060916 FTBL-IS-076-060916RE FTBL-IS-077-060916-A FTBL-IS-077-060916-ARE FTBL-IS-077-060916-B FTBL-IS-077-060916-BRE FTBL-IS-077-060916-C FTBL-IS-077-060916-CRE

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605126-8	7/17/2016 1:40:00 PM	3-NITROTOLUENE	0.056 mg/Kg	FTBL-IS-071-060916 FTBL-IS-073-060916 FTBL-IS-074-060916-A FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-075-060916 FTBL-IS-076-060916 FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C

Method: 8330B
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604697-3	6/24/2016 7:03:00 AM	2,6-DINITROTOLUENE	0.058 ug/L	EB060916

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:24:36 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606364

Laboratory: ALS_K

EDD Filename: K1606364_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-077-060916-AMS (Dry) FTBL-IS-077-060916-AMSD (Dry) (FTBL-IS-077-060916-A)	ANTIMONY LEAD	13 -415	4 -626	72.00-124.00 84.00-118.00	- 39.2 (20.00)	ANTIMONY LEAD	No Qual, Post Spike In

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-077-060916-AMS FTBL-IS-077-060916-AMSD (FTBL-IS-077-060916-A)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX Tetry	61 65 62 67 63 66 66 61 60 66 56 71 68 58 55	66 69 66 71 70 - 68 65 - 68 58 - - 61 63	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 86.00-118.00 64.00-127.00 71.00-124.00 74.00-124.00 73.00-124.00 72.00-128.00 67.00-129.00 68.00-135.00	- - - - - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLU 2-NITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate RDX Tetry	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:23:03 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606364

Laboratory: ALS_K

EDD Filename: K1606364_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605126-3 (FTBL-IS-071-060916 FTBL-IS-073-060916 FTBL-IS-074-060916-A FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-075-060916 FTBL-IS-076-060916 FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C)	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	6 6 2 0 0	- - - - -	71.00-120.00 70.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00	- - - - -	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J(all detects) R(all non-detects)
KWG1605126-3 KWG1605126-7 (FTBL-IS-071-060916 FTBL-IS-073-060916 FTBL-IS-074-060916-A FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-075-060916 FTBL-IS-076-060916 FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX RDX Tetryl	40 19 43 48 48 33 14 21 22 65 66 25	- - - - - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 67.00-129.00 68.00-135.00	- - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX RDX Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604697-1 KWG1604697-2 (EB060916)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	76 67 76 70 69 61 -	- - - - - - -	78.00-120.00 77.00-127.00 79.00-120.00 73.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00	- 22 (20.00) - 24 (20.00) 21 (20.00) - 22 (20.00)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:24:43 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1606364

Laboratory: ALS_K

EDD Filename: K1606364_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-074-060916-A	FTBL- IS-074-060916-B	FTBL- IS-074-060916-C			
ARSENIC	6.92	6.74	6.54	2.82	20.00	No Qualifiers Applied
BERYLLIUM	0.963	0.965	0.935	1.76	20.00	
COPPER	23.0	22.8	21.8	2.85	20.00	
NICKEL	9.18	8.79	8.54	3.65	20.00	
ZINC	48.5	48.8	46.9	2.13	20.00	
ANTIMONY	0.361	0.470	0.920	50.77	20.00	J(all detects)

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-077-060916-	FTBL- IS-077-060916-	FTBL- IS-077-060916-			
LEAD	1070	552	1320	39.94	20.00	J(all detects)

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-077-060916-A	FTBL- IS-077-060916-B	FTBL- IS-077-060916-C			
ARSENIC	5.02	4.56	5.61	10.4	20.00	No Qualifiers Applied
BERYLLIUM	1.70	1.73	1.71	0.89	20.00	
COPPER	38.3	31.7	34.7	9.47	20.00	
NICKEL	7.76	7.68	7.89	1.36	20.00	
ZINC	67.0	66.3	66.3	0.61	20.00	
ANTIMONY	40.4	14.1	50.4	53.62	20.00	J(all detects)

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-074-060916-	FTBL- IS-074-060916-	FTBL- IS-074-060916-			
LEAD	63.6	89.1	146	42.37	20.00	J(all detects)

Method: 8330E

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-074-060916-A	FTBL- IS-074-060916-B	FTBL- IS-074-060916-C			
1,3-DINITROBENZENE	0.015	0.041 U	0.041 U	NC	20.00	No Qualifiers Applied
2,6-DINITROTOLUENE	0.025	0.021 U	0.021 U	NC	20.00	
2-AMINO-4,6-DINITROTOLUENE	0.012	0.021 U	0.021 U	NC	20.00	
2-NITROTOLUENE	0.021	0.021 U	0.021 U	NC	20.00	
4-Amino-2,6-Dinitrotoluene	0.0080	0.021 U	0.021 U	NC	20.00	
HMX	0.0086	0.021 U	0.021 U	NC	20.00	
NITROBENZENE	0.0093	0.021 U	0.021 U	NC	20.00	

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-077-060916-A	FTBL- IS-077-060916-B	FTBL- IS-077-060916-C			
2-NITROTOLUENE	0.014	0.021 U	0.021 U	NC	20.00	No Qualifiers Applied

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/19/2016 1:46:19 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606364

Laboratory: ALS_K

EDD Filename: K1606364_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-074-060916-A	1,3-DINITROBENZENE	J	0.015	0.041	LOQ	mg/Kg	J (all detects)
	2,6-DINITROTOLUENE	JN	0.025	0.041	LOQ	mg/Kg	
	2-AMINO-4,6-DINITROTOLUENE	JP	0.012	0.041	LOQ	mg/Kg	
	2-NITROTOLUENE	JP	0.021	0.081	LOQ	mg/Kg	
	4-Amino-2,6-Dinitrotoluene	JN	0.0080	0.081	LOQ	mg/Kg	
	HMX	J	0.0086	0.041	LOQ	mg/Kg	
	NITROBENZENE	JP	0.0093	0.081	LOQ	mg/Kg	
FTBL-IS-077-060916-A	2-NITROTOLUENE	JN	0.014	0.081	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB060916	LEAD	J	0.015	0.020	LOQ	ug/L	J (all detects)
	ZINC	J	0.3	0.5	LOQ	ug/L	

Method: 8330B

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB060916	HMX	JN	0.038	0.10	LOQ	ug/L	J (all detects)

LDC #: 36840B4a
 SDG #: K1606364
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 8/16
 Page: 1 of 1
 Reviewer: SM
 2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=11
VII.	Matrix Spike/Matrix Spike Duplicates	SW	Not reviewed for Level III validation. <u>FA 12/13: show, B in</u>
VIII.	Duplicate sample analysis	N	Not reviewed for Level III validation.
IX.	Serial Dilution	D	
X.	Laboratory control samples	A	Not reviewed for Level III validation. <u>LES</u>
XI.	Field Duplicates	N	Not reviewed for Level III validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for Level III validation.
XIV.	Overall Assessment of Data	A	Not reviewed for Level III validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-077-060916-A**	K1606364-001**	Soil	06/09/16
2	FTBL-IS-077-060916-B**	K1606364-002**	Soil	06/09/16
3	FTBL-IS-077-060916-C**	K1606364-003**	Soil	06/09/16
4	FTBL-IS-074-060916-A**	K1606364-004**	Soil	06/09/16
5	FTBL-IS-074-060916-B**	K1606364-005**	Soil	06/09/16
6	FTBL-IS-074-060916-C**	K1606364-006**	Soil	06/09/16
7	FTBL-IS-073-060916**	K1606364-007**	Soil	06/09/16
8	FTBL-IS-075-060916**	K1606364-008**	Soil	06/09/16
9	FTBL-IS-071-060916**	K1606364-009**	Soil	06/09/16
10	FTBL-IS-076-060916**	K1606364-010**	Soil	06/09/16
11	EB060916	K1606364-011	Water	06/09/16
12	FTBL-IS-077-060916-AMS	K1606364-001MS	Soil	06/09/16
13	FTBL-IS-077-060916-AMSD	K1606364-001MSD	Soil	06/09/16
14				
15				

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5xdilution

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1-4

				Sample Identification										
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)										
Be		0.020	0.05											

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 5-10

				Sample Identification										
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)										
Be		0.011	0.0275											

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All water

				Sample Identification										
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	11										
Sb		0.007	0.035											
Pb		0.005	0.025	0.015										
Ni		0.06	0.3	0.22										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 400
 36810B40
 SDG #: K1606364
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 10/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	Not reviewed for Level III validation.
V.	Field blanks		
VI.	Surrogate spikes		Not reviewed for Level III validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for Level III validation.
VIII.	Laboratory control samples		Not reviewed for Level III validation.
IX.	Field duplicates		
X.	Compound quantitation RL/LOQ/LODs	SW	Not reviewed for Level III validation.
XI.	Target compound identification	IV	Not reviewed for Level III validation.
XII.	Overall assessment of data		Not reviewed for Level III validation.

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-077-060916-A**	K1606364-001**	Soil	06/09/16
2	FTBL-IS-077-060916-B**	K1606364-002**	Soil	06/09/16
3	FTBL-IS-077-060916-C**	K1606364-003**	Soil	06/09/16
4	FTBL-IS-074-060916-A**	K1606364-004**	Soil	06/09/16
5	FTBL-IS-074-060916-B**	K1606364-005**	Soil	06/09/16
6	FTBL-IS-074-060916-C**	K1606364-006**	Soil	06/09/16
7	FTBL-IS-073-060916**	K1606364-007**	Soil	06/09/16
8	FTBL-IS-075-060916**	K1606364-008**	Soil	06/09/16
9	FTBL-IS-071-060916**	K1606364-009**	Soil	06/09/16
10	FTBL-IS-076-060916**	K1606364-010**	Soil	06/09/16
11	EB060916	K1606364-011	Water	06/09/16
12	FTBL-IS-077-060916-AMS	K1606364-001MS	Soil	06/09/16
13	FTBL-IS-077-060916-AMSD	K1606364-001MSD	Soil	06/09/16
14	FTBL-IS-077-060916-ADUP	K1606364-001DUP	Soil	06/09/16
15	FTBL-IS-077-060916-ATRP	K1606364-001TRP	Soil	06/09/16
16				
17				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36810B40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: Q

2nd Reviewer: W

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y	N	N/A	Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y ~~N~~ N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y (N/A)	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1606639

LDC #: 36810C4a
 SDG #: K1606639
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/8/16
 Page: 1 of 1
 Reviewer: ca
 2nd Reviewer: sm

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

Samples appended with "F" were analyzed as dissolved.

	Client ID	Lab ID	Matrix	Date
1	FTBL-SP-03-061516	K1606639-001	Water	06/15/16
2	FTBL-SP-03-061516F	K1606639-001F	Water	06/15/16
3	FTBL-SP-03-061516MS	K1606639-001MS	Water	06/15/16
4	FTBL-SP-03-061516MSD	K1606639-001MSD	Water	06/15/16
5				
6				
7				
8				
9				
10				
11				
12				

Notes: _____

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 36810C4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: _____

Sample Concentration units, unless otherwise noted: ug/L Associated Samples: All

				Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)									
Sb		0.015	0.075										
Pb		0.007	0.035										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Enclosure II
Level IV Data Validation Reports

**Laboratory Data Consultants, Inc.
Data Validation Report****Project/Site Name:** Fort Bliss, Castner Range**LDC Report Date:** August 19, 2016**Parameters:** Metals**Validation Level:** Level IV**Laboratory:** ALS Environmental**Sample Delivery Group (SDG):** K1606364

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-077-060916-A	K1606364-001	Soil	06/09/16
FTBL-IS-077-060916-B	K1606364-002	Soil	06/09/16
FTBL-IS-077-060916-C	K1606364-003	Soil	06/09/16
FTBL-IS-074-060916-A	K1606364-004	Soil	06/09/16
FTBL-IS-074-060916-B	K1606364-005	Soil	06/09/16
FTBL-IS-074-060916-C	K1606364-006	Soil	06/09/16
FTBL-IS-073-060916	K1606364-007	Soil	06/09/16
FTBL-IS-075-060916	K1606364-008	Soil	06/09/16
FTBL-IS-071-060916	K1606364-009	Soil	06/09/16
FTBL-IS-076-060916	K1606364-010	Soil	06/09/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Arsenic, Beryllium, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead	0.05 mg/Kg	All soil samples in SDG K1606364
ICB/CCB	Beryllium	0.020 ug/L	FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C FTBL-IS-074-060916-A
ICB/CCB	Beryllium	0.011 ug/L	FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-073-060916 FTBL-IS-075-060916 FTBL-IS-071-060916 FTBL-IS-076-060916

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Sample EB060916 was identified as a rinsate. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
EB060916	06/09/16	Copper Lead Nickel Zinc	0.10 ug/L 0.015 ug/L 0.22 ug/L 0.3 ug/L	All soil samples in SDG K1606364

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-IS-077-060916-AMS/MSD, no data were qualified for Lead percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
FTBL-IS-077-060916-AMS/MSD (FTBL-IS-077-060916-A)	Lead	39.2 (≤20)	J (all detects)	A

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Triplicates

Samples FTBL-IS-077-060916-A, FTBL-IS-077-060916-B, and FTBL-IS-077-060916-C and samples FTBL-IS-074-060916-A, FTBL-IS-074-060916-B, and FTBL-IS-074-060916-C were identified as field triplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)			%RSD (Limits)	Flag	A or P
	FTBL-IS-077-060916-A	FTBL-IS-077-060916-B	FTBL-IS-077-060916-C			
Antimony	40.4	14.1	50.4	54 (≤20)	J (all detects)	A
Arsenic	5.02	4.56	5.61	10 (≤20)	-	-
Beryllium	1.70	1.73	1.71	1 (≤20)	-	-
Copper	38.3	31.7	34.7	9 (≤20)	-	-
Lead	1070	552	1320	40 (≤20)	J (all detects)	A
Nickel	7.76	7.68	7.89	1 (≤20)	-	-
Zinc	67.0	66.3	66.3	1 (≤20)	-	-

Analyte	Concentration (mg/Kg)			%RSD (Limits)	Flag	A or P
	FTBL-IS-074-060916-A	FTBL-IS-074-060916-B	FTBL-IS-074-060916-C			
Antimony	0.361	0.470	0.920	51 (≤20)	J (all detects)	A
Arsenic	6.92	6.74	6.54	3 (≤20)	-	-
Beryllium	0.963	0.965	0.935	2 (≤20)	-	-
Copper	23.0	22.8	21.8	3 (≤20)	-	-
Lead	63.6	89.1	146	42 (≤20)	J (all detects)	A
Nickel	9.18	8.79	8.54	4 (≤20)	-	-
Zinc	48.5	48.8	46.9	2 (≤20)	-	-

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD RPD and field triplicate %RSD, data were qualified as estimated in six samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

**Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1606364**

Sample	Analyte	Flag	A or P	Reason
FTBL-IS-077-060916-A	Lead	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C FTBL-IS-074-060916-A FTBL-IS-074-060916-B FTBL-IS-074-060916-C	Antimony Lead	J (all detects) J (all detects)	A	Field triplicates (%RSD)

**Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1606364**

No Sample Data Qualified in this SDG

**Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1606364**

No Sample Data Qualified in this SDG

LDC #: 36810B4a
 SDG #: K1606364
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 8/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	EB=11
VII.	Matrix Spike/Matrix Spike Duplicates	SW	Not reviewed for Level III validation. ADR
VIII.	Duplicate sample analysis	N	Not reviewed for Level III validation. ADR
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	Not reviewed for Level III validation. ADR
XI.	Field Duplicates	SW	Not reviewed for Level III validation. ADR
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for Level III validation. ADR
XIV.	Overall Assessment of Data	A	Not reviewed for Level III validation. ADR

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-077-060916-A**	K1606364-001**	Soil	06/09/16
2	FTBL-IS-077-060916-B**	K1606364-002**	Soil	06/09/16
3	FTBL-IS-077-060916-C**	K1606364-003**	Soil	06/09/16
4	FTBL-IS-074-060916-A**	K1606364-004**	Soil	06/09/16
5	FTBL-IS-074-060916-B**	K1606364-005**	Soil	06/09/16
6	FTBL-IS-074-060916-C**	K1606364-006**	Soil	06/09/16
7	FTBL-IS-073-060916**	K1606364-007**	Soil	06/09/16
8	FTBL-IS-075-060916**	K1606364-008**	Soil	06/09/16
9	FTBL-IS-071-060916**	K1606364-009**	Soil	06/09/16
10	FTBL-IS-076-060916**	K1606364-010**	Soil	06/09/16
11	EB060916	K1606364-011	Water	06/09/16
12	FTBL-IS-077-060916-AMS	K1606364-001MS	Soil	06/09/16
13	FTBL-IS-077-060916-AMSD	K1606364-001MSD	Soil	06/09/16
14				
15				

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the low standard checks within 70-130%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients within limits as specified by the method?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm 2X$ RL for soil was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the %Rs were outside the criteria, was a reanalysis performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL (ICP/MS)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%Ds) < 10%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Based on net weight
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Target analytes were detected in the field duplicates.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XIII. Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target analytes were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: Q

2nd reviewer:

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dilution

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: All Soil

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)										
Pb	0.05													

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1-4

					Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)										
Be		0.020	0.05											

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 5-10

					Sample Identification									
Analyte	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Action Level	No qualifiers (>5x)										
Be		0.011	0.0275											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET

Field Blanks

Reviewer: 6

2nd Reviewer:

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: ug/L **Associated sample units:** mg/Kg

Sampling date: 6/9/16

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____ All Soil

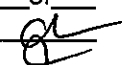

[illegible]

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC#: 36840D4a

VALIDATION FINDINGS WORKSHEET **Field Triplicates**

Page: 1 of 1
 Reviewer: 
 2nd Reviewer: 

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)			RSD (≤20)	Qualifiers
	1	2	3		
Antimony	40.4	14.1	50.4	54	Jdet/A
Arsenic	5.02	4.56	5.61	10	
Beryllium	1.70	1.73	1.71	1	
Copper	38.3	31.7	34.7	9	
Lead	1070	552	1320	40	Jdet/A
Nickel	7.76	7.68	7.89	1	
Zinc	67.0	66.3	66.3	1	

Analyte	Concentration (mg/Kg)			RSD (≤20)	Qualifiers
	4	5	6		
Antimony	0.361	0.470	0.920	51	Jdet/A
Arsenic	6.92	6.74	6.54	3	
Beryllium	0.963	0.965	0.935	2	
Copper	23.0	22.8	21.8	3	
Lead	63.6	89.1	146	42	Jdet/A
Nickel	9.18	8.79	8.54	4	
Zinc	48.5	48.8	46.9	2	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\36840D4a.wpd

LDC #: ^{40D}~~3081005~~

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: CR
2nd Reviewer: Q

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
ICV(1706)	ICP/MS (Initial calibration)	Be	2.618	2.5	105	104	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV(122:8)	ICP/MS (Continuing calibration)	Ni	24,9106	250	100	100	Y
	CVAA (Continuing calibration)						

Comments:

LDC #: ⁴⁰⁰~~3681004~~VALIDATION FINDINGS WORKSHEET
Level IV Recalculation WorksheetPage: 1 of 1
Reviewer: CR
2nd Reviewer: 9

METHOD: Trace metals (EPA CLP SOW ISM01.2)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation,
Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (ug/L)
SDR = Serial Dilution Result (ug/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
ICSA13(m:46)	ICP interference check	As	25.165	25.0	101	101	Y
LCS	Laboratory control sample	Zn	1056.78	1000	106	106	Y
12	Matrix spike	Be	(SSR-SR) 9.78	10.0	98	98	Y
12/B	Duplicate	Cu	85.11	86.51	1.6	1.6	Y
1	ICP serial dilution	ph _{ug/L}	213.717	216.685	1.4	1.4	Y

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: August 19, 2016

Parameters: Explosives

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1606364

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-077-060916-A	K1606364-001	Soil	06/09/16
FTBL-IS-077-060916-B	K1606364-002	Soil	06/09/16
FTBL-IS-077-060916-C	K1606364-003	Soil	06/09/16
FTBL-IS-074-060916-A	K1606364-004	Soil	06/09/16
FTBL-IS-074-060916-B	K1606364-005	Soil	06/09/16
FTBL-IS-074-060916-C	K1606364-006	Soil	06/09/16
FTBL-IS-073-060916	K1606364-007	Soil	06/09/16
FTBL-IS-075-060916	K1606364-008	Soil	06/09/16
FTBL-IS-071-060916	K1606364-009	Soil	06/09/16
FTBL-IS-076-060916	K1606364-010	Soil	06/09/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 15.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

Retention time windows were established as required by the method.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG1605126-8	06/23/16	3-Nitrotoluene	0.056 mg/Kg	All samples in SDG K1606364

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

V. Field Blanks

Sample EB060916 was identified as a rinsate. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples
EB060916	06/09/16	HMX	0.38 ug/L	All samples in SDG K1606364

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
FTBL-IS-077-060916-AMS/MSD (FTBL-IS-077-060916-A)	HMX	56 (74-124)	58 (74-124)	J (all detects) UJ (all non-detects)	A
	RDX	58 (67-129)	61 (67-129)		
	1,3,5-Trinitrobenzene	61 (80-116)	66 (80-116)		
	1,3-Dinitrobenzene	65 (73-119)	69 (73-119)		
	3,5-Dinitroaniline	61 (86-118)	65 (86-118)		
	Tetryl	55 (68-135)	63 (68-135)		
	4-Amino-2,6-dinitrotoluene	60 (64-127)	-		
	2-Amino-4,6-dinitrotoluene	66 (71-123)	-		
	2,4,6-Trinitrotoluene	62 (71-120)	66 (71-120)		
	2,6-Dinitrotoluene	63 (79-117)	70 (79-117)		
	2,4-Dinitrotoluene	67 (75-121)	71 (75-121)		
	2-Nitrotoluene	66 (70-124)	68 (70-124)		
	4-Nitrotoluene	66 (71-124)	68 (71-124)		
	Nitroglycerin	71 (73-124)	-		
	Pentaerythritol tetranitrate	68 (72-128)	-		

Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
KWG1605126-7	3,5-Dinitroaniline	82 (86-118)	All samples in SDG K1606364	UJ (all non-detects)	P

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits with the following exceptions:

SRM ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
KWG1605126-3	HMX RDX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene 3,5-Dinitroaniline Tetryl 4-Amino-2,6-dinitrotoluene 2-Amino-4,6-dinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 4-Nitrotoluene 3-Nitrotoluene	65 (74-124) 66 (67-129) 40 (80-116) 19 (73-119) 33 (86-118) 25 (68-135) 21 (64-127) 48 (71-123) 48 (79-117) 43 (75-121) 22 (71-124) 14 (67-129)	All samples in SDG K1606364	J (all detects) UJ (all non-detects)	P
KWG1605126-3	Nitrobenzene 2,4,6-Trinitrotoluene Nitroglycerine Pentaerythritol tetranitrate 2-Nitrotoluene	2 (67-129) 6 (71-120) 0 (73-124) 0 (72-128) 6 (79-117)	All samples in SDG K1606364	R (all non-detects) R (all non-detects) R (all non-detects) R (all non-detects) R (all non-detects)	P

IX. Field Triplicates

Samples FTBL-IS-077-060916-A, FTBL-IS-077-060916-B, and FTBL-IS-077-060916-C and samples FTBL-IS-074-060916-A, FTBL-IS-074-060916-B, FTBL-IS-074-060916-C were identified as field triplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)			%RSD (Limits)	Flag	A or P
	FTBL-IS-077-060916-A	FTBL-IS-077-060916-B	FTBL-IS-077-060916-C			
2-Nitrotoluene	0.014	0.021U	0.021U	22 (≤20)	NQ	-

Compound	Concentration (mg/Kg)			%RSD (Limits)	Flag	A or P
	FTBL-IS-074-060916-A	FTBL-IS-074-060916-B	FTBL-IS-074-060916-C			
HMX	0.0086	0.021U	0.021U	42 (≤20)	NQ	-
1,3-Dinitrobenzene	0.015	0.041U	0.041U	46 (≤20)	NQ	-

Compound	Concentration (mg/Kg)			%RSD (Limits)	Flag	A or P
	FTBL-IS-074-060916-A	FTBL-IS-074-060916-B	FTBL-IS-074-060916-C			
Nitrobenzene	0.0093	0.021U	0.021U	40 (≤20)	NQ	-
4-Amino-2,6-dinitrotoluene	0.0080	0.021U	0.021U	45 (≤20)	NQ	-
2-Amino-4,6-dinitrotoluene	0.012	0.021U	0.021U	29 (≤20)	NQ	-
2,6-Dinitrotoluene	0.025	0.021U	0.021U	10 (≤20)	NQ	-
2-Nitrotoluene	0.021	0.021U	0.021U	0 (≤20)	NQ	-

NQ = One or more results were less than 5x the limit of quantitation (LOQ), therefore no data were qualified.

X. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
FTBL-IS-077-060916-A	2-Nitrotoluene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	A
FTBL-IS-074-060916-A	2,6-Dinitrotoluene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	A

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
FTBL-IS-074-060916-A	Nitrobenzene 2-Amino-4,6-dinitrotoluene 2-Nitrotoluene	63.7 125.0 54.5	J (all detects) J (all detects) J (all detects)	A

XI. Target Compound Identifications

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to SRM %R, data were rejected in ten samples.

Due to MS/MSD %R, LCS %R, SRM %R, no confirmation, and RPD between two columns, data were qualified as estimated in ten samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Explosives - Data Qualification Summary - SDG K1606364

Sample	Compound	Flag	A or P	Reason
FTBL-IS-077-060916-A	HMX RDX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene 3,5-Dinitroaniline Tetryl 4-Amino-2,6-dinitrotoluene 2-Amino-4,6-dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene Nitroglycerin Pentaerythritol tetranitrate	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C FTBL-IS-074-060916-A FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-073-060916 FTBL-IS-075-060916 FTBL-IS-071-060916 FTBL-IS-076-060916	3,5-Dinitroaniline	UJ (all non-detects)	P	Laboratory control samples (%R)
FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C FTBL-IS-074-060916-A FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-073-060916 FTBL-IS-075-060916 FTBL-IS-071-060916 FTBL-IS-076-060916	HMX RDX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene 3,5-Dinitroaniline Tetryl 4-Amino-2,6-dinitrotoluene 2-Amino-4,6-dinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 4-Nitrotoluene 3-Nitrotoluene	J (all detects) UJ (all non-detects)	P	Standard reference materials (%R)
FTBL-IS-077-060916-A FTBL-IS-077-060916-B FTBL-IS-077-060916-C FTBL-IS-074-060916-A FTBL-IS-074-060916-B FTBL-IS-074-060916-C FTBL-IS-073-060916 FTBL-IS-075-060916 FTBL-IS-071-060916 FTBL-IS-076-060916	Nitrobenzene 2,4,6-Trinitrotoluene Nitroglycerine Pentaerythritol tetranitrate 2-Nitrotoluene	R (all non-detects) R (all non-detects) R (all non-detects) R (all non-detects) R (all non-detects)	P	Standard reference materials (%R)
FTBL-IS-077-060916-A	2-Nitrotoluene	NJ (all detects)	A	Compound quantitation (no confirmation)
FTBL-IS-074-060916-A	2,6-Dinitrotoluene	NJ (all detects)	A	Compound quantitation (no confirmation)

Sample	Compound	Flag	A or P	Reason
FTBL-IS-074-060916-A	Nitrobenzene 2-Amino-4,6-dinitrotoluene 2-Nitrotoluene	J (all detects) J (all detects) J (all detects)	A	Compound quantitation (RPD between two columns)

Fort Bliss, Castner Range

Explosives - Laboratory Blank Data Qualification Summary - SDG K1606364

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range

Explosives - Field Blank Data Qualification Summary - SDG K1606364

No Sample Data Qualified in this SDG

LDC #: 36840P40

VALIDATION COMPLETENESS WORKSHEET

SDG #: K1606364

ADR/IV

Laboratory: ALS Environmental

Date: 8/10/16

Page: 1 of 1

Reviewer: JLV

2nd Reviewer: JLV

METHOD: HPLC Explosives (EPA SW 846 Method 8330)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A, A	$RSD \leq 15\%$, Y^2 $10\% \leq 20\%$
III.	Continuing calibration	A	$CCV \leq 20\%$
IV.	Laboratory Blanks	W	Not reviewed for Level III validation.
V.	Field blanks	W	EB = 11
VI.	Surrogate spikes	A	Not reviewed for Level III validation.
VII.	Matrix spike/Matrix spike duplicates	W	Not reviewed for Level III validation.
VIII.	Laboratory control samples	W	Not reviewed for Level III validation. LCS / SRM
IX.	Field duplicates	W	$TP = 1 + 2 + 3$, $4 + 5 + 6$
X.	Compound quantitation RL/LOQ/LODs	W	Not reviewed for Level III validation.
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Overall assessment of data	A	Not reviewed for Level III validation.

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-077-060916-A**	K1606364-001**	Soil	06/09/16
2	FTBL-IS-077-060916-B**	K1606364-002**	Soil	06/09/16
3	FTBL-IS-077-060916-C**	K1606364-003**	Soil	06/09/16
4	FTBL-IS-074-060916-A**	K1606364-004**	Soil	06/09/16
5	FTBL-IS-074-060916-B**	K1606364-005**	Soil	06/09/16
6	FTBL-IS-074-060916-C**	K1606364-006**	Soil	06/09/16
7	FTBL-IS-073-060916**	K1606364-007**	Soil	06/09/16
8	FTBL-IS-075-060916**	K1606364-008**	Soil	06/09/16
9	FTBL-IS-071-060916**	K1606364-009**	Soil	06/09/16
10	FTBL-IS-076-060916**	K1606364-010**	Soil	06/09/16
11	EB060916	K1606364-011	Water	06/09/16
12	FTBL-IS-077-060916-AMS	K1606364-001MS	Soil	06/09/16
13	FTBL-IS-077-060916-AMSD	K1606364-001MSD	Soil	06/09/16
14	FTBL-IS-077-060916-ADUP	K1606364-001DUP	Soil	06/09/16
15	FTBL-IS-077-060916-ATRP	K1606364-001TRP	Soil	06/09/16
16				
17				

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>			
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>			
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>			
Were all percent relative standard deviations (%RSD) < 20%? <u>1.570</u> ?	<input checked="" type="checkbox"/>			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input checked="" type="checkbox"/>			
Were the RT windows properly established?	<input checked="" type="checkbox"/>			
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>			
Were all percent differences (%D) < 20% or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>			
III. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>			
Were all percent differences (%D) < 20% or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>			
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>			
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>			
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>			
V. Field Blanks				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>			
Were target compounds detected in the field blanks?	<input checked="" type="checkbox"/>			
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	<input checked="" type="checkbox"/>			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			<input checked="" type="checkbox"/>	
VII. Matrix spike/matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>			
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		<input checked="" type="checkbox"/>		

LDC #: 36810840

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer: JK

Validation Area	Yes	No	NA	Findings/Comments
III. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	/			
Were target compounds detected in the field duplicates?	/			
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes:

LDC #: 26810840

VALIDATION FINDINGS WORKSHEET

BlanksPage: 1 of 1
Reviewer: S
2nd Reviewer: JGMETHOD: ✓ GC-HPIC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ Y ☐ N ☐ N/A Were all samples associated with a given method blank?
☒ Y ☐ N ☐ N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
☒ Y ☐ N ☐ N/A Was a method blank performed with each extraction batch?
☒ Y ☐ N ☐ N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Blank extraction date: 6/23/16 Blank analysis date: 7/17/16Conc. units: mg/LAssociated samples: all soils

Compound	Blank ID	Sample Identification							
<u>KN151605726-8</u>									
<u>M</u>	<u>0.056</u>								

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification							

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 368100 ⁴⁰⁰

VALIDATION FINDINGS WORKSHEET Field Blanks

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 56

METHOD: GC HP LC

☒ N N/A Field blanks were identified in this SDG.
☒ N N/A Were target compounds detected in the field blanks?

Blank units: 100 Associated sample units: _____

Sampling date: 6/9/16

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: All soils

Compound	Blank ID	Sample Identification							
	<u>11</u>								
<u>HMX</u>	<u>0.38</u>								

Blank units: _____ Associated sample units: _____

Sampling date: _____

Field blank type: (circle one) Field Blank / Rinsate / Other: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

METHOD: ✓ GS HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y N N/A Were an MS/MSD) analyzed for every 20 samples for each matrix or whenever a sample extraction was performed?

Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

[illegible]

LDC #: ^{40 D}~~2810P40~~

VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: Q
2nd Reviewer: JK

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

☒ N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?☒ N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

☒ N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Qualifications
	KW#1605126-3	A	65 (74-124)	()	()	All soils	+/N/P
	(SRM)	B	66 (67-129)	()	()	(det + N/D)	+/N/P
		C	40 (80-116)	()	()		
		D	19 (73-119)	()	()		
		E	33 (86-118)	()	()		
		F	25 (68-125)	()	()		
		H	21 (64-127)	()	()		
		I	48 (71-123)	()	()		
		K	48 (79-117)	()	()		
		J	43 (75-121)	()	()		
		N	22 (71-124)	()	()		
		M	12 (67-129)	()	()		
		F	2 (67-129)	()	()	(N/D)	+/N/P
		G	6 (71-120)	()	()		
		O	0 (73-124)	()	()		
		R	0 (72-128)	()	()		
		L	6 (77-117)	()	()		+/N/P
			()	()	()		
	KW#1605126-7	P	82 (86-118)	()	()	All soils (N/D)	+/N/P
			()	()	()		
			()	()	()		
			()	()	()		
			()	()	()		
			()	()	()		

LDC#: 36810B40**VALIDATION FINDINGS WORKSHEET**
Field TriplicatesPage: 1 of 1
Reviewer: 9
2nd Reviewer: JVC**METHOD:** Explosives (EPA SW846 Method 8330B)Y N NA
Y N NA

Were lab triplicates sets identified in this SDG?

Were target analytes detected in the field triplicate sets?

Compound	Concentration (mg/kg)			RSD (≤20%)	Qual
	1	2	3		
L	0.014	0.021U	0.021U	22	NQ

Compound	Concentration (mg/kg)			RSD (≤20%)	Qual
	4	5	6		
A	0.0086	0.021U	0.021U	42	NQ
D	0.015	0.041U	0.041U	46	NQ
F	0.0093	0.021U	0.021U	40	NQ
H	0.0080	0.021U	0.021U	45	NQ
I	0.012	0.021U	0.021U	29	NQ
K	0.025	0.021U	0.021U	10	NQ
L	0.021	0.021U	0.021U	0	NQ

NQ = One or two results were < 5x the Limit of Quantitation (LOQ), therefore no data were qualified.

V:\FIELD REPLICATES\36810B40_Arcadis.wpd

LDC #: 36800240⁴⁰²VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation VerificationPage: 1 of 1
Reviewer: Q
2nd Reviewer: JVBMETHOD: GC _____ HPLC ✓

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = 100 * (S/X)

A = Area of compound,

C = Concentration of compound,

S = Standard deviation of the CF

X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (1000 std)	CF (1000 std)	Average CF (initial)	Average CF (initial)	%RSD	%RSD
1	ICAZ	7/13/16	A (LC10)	14400	14390	14200	14200	12.1	12.0
			F ✓	41800	41765	42200	42200	0.7	0.7
2	ICAZ	7/13/16	O (LC10)	19500	19466	19300	19288	9.0	9.0
3	ICAZ	6/8/16	M (LC08)	24900	24904	26800	26820	11.7	11.8
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 368101040

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1Reviewer: 92nd Reviewer: JRMETHOD: GC _____ HPLC ✓

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
 CF = A/C

Where: ave. CF = initial calibration average CF
 CF = continuing calibration CF
 A = Area of compound
 C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(lcal)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	716000138	7/17/16	A (LC10)	14200	14300	14347	1	1
			Q ↓	42200	44100	44059	4	4
			D ↓	19300	22200	22220	15	15
2	716000150	7/17/16	A ↓	14200	14500	14521	2	2
			Q ↓	42200	43800	43840	4	4
			D ↓	19300	21000	21000	9	9
3	0718000133	7/20/16	M (LC08)	26800	28600	28571	6	7
4	718000209	7/21/16	M (LC08)	26800	23700	23673	12	12

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: ⁴⁰ ~~36810B~~ 40

VALIDATION FINDINGS WORKSHEET Surrogate Results Verification

Page: 1 of 1
Reviewer: [Signature]
2nd reviewer: JLB

METHOD: GC ☒ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	
1-chloro-3-nitrobenzene		5000	3490	70	70	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery		Percent Difference
				Reported	Recalculated	

LDC #: ⁴⁰⁰~~368~~10

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: Q
2nd Reviewer: JG

METHOD: ☒ GC ☐ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA Where SSC = Spiked sample concentration SC = Sample concentration
SA = Spike added
MS = Matrix spike MSD = Matrix spike duplicate

RPD = (((SSCMS - SSCMSD) * 2) / (SSCMS + SSCMSD)) * 100

MS/MSD samples: 12/13

Compound	Spike Added (mcs)		Sample Conc. (mcs)	Spike Sample Concentration (mcs)		Matrix spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)	2.01	2.01	ND	1.12	1.17	56	56	58	58	5	4
2,4,6-Trinitrotoluene (8330)	✓	✓	✓	1.75	1.33	62	62	66	66	6	7

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36312340

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicate Results VerificationPage: 4 of 4Reviewer: 92nd Reviewer: NCMETHOD: GC ☒ HPLC

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

 $\% \text{ Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$

Where: SSC = Spiked sample concentration

SC = Concentration

SA = Spike added

 $\text{RPD} = | \text{SSCLCS} - \text{SSCLCSD} | * 2 / (\text{SSCLCS} + \text{SSCLCSD})$

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: KNF1605126-7

Compound	Spike Added (mg)		Spiked Sample Concentration (mg/L)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)	2.00	NA	1.48	NA	74	74				
2,4,6-Trinitrotoluene (8330)	↓	↓	1.70	↓	85	85				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36810540⁴⁶⁰VALIDATION FINDINGS WORKSHEET
Sample Calculation VerificationPage: 1 of 1
Reviewer: 9
2nd Reviewer: NCMETHOD: GC ☒ HPLCY N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration = $\frac{(A)(F_v)(D_f)}{(RF)(V_s \text{ or } W_s)(\%S/100)}$

Example:

Sample ID: 4 Compound Name: A

A= Area or height of the compound to be measured

Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound
in the initial calibration

Vs= Initial volume of the sample

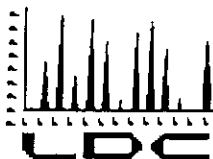
Ws= Initial weight of the sample

%S= Percent Solid

$$\begin{aligned} \text{Concentration} &= \frac{(157612) \times 8 \times 1}{(14200)(10.0445)(0.989)(1000)} \\ &= 0.0086 \text{ mg/kg} \end{aligned}$$

#	Sample ID	Compound	Reported Concentrations (mg/kg)	Recalculated Results Concentrations ()	Qualifications
		<u>A</u>	<u>0.0086</u>		

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

August 30, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 15, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #36870:

<u>SDG #</u>	<u>Fraction:</u>
K1606412	Metals, Explosives
K1606956	

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

LDC #36870 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

V:\LOGIN\Arcadis\Fort Bliss-Castner Range\36870ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1606412, K1606956

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

August 29, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), surrogates, interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), laboratory replicates (REP), serial dilution, laboratory control sample (LCS), sample reference materials (SRM), equipment blanks, and field triplicates. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, interference check samples, ICB/CCBs, and serial dilution, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the methods were met with the following exceptions:

SDG/ Method	Date	Column	Compound	%D (limits)	Associated Samples	Flag	A or P
K1606956/ 8330B	07/28/16	UltraAromax	3,5-Dinitroaniline	21 (≤20)	FTBL-IS-082-062116-B FTBL-IS-082-062116-C FTBL-IS-082-062116-A FTBL-IS-052-062116-B	UJ (all non-detects)	A
K1606956/ 8330B	07/29/16	UltraAromax	1,3-Dinitrobenzene	21 (≤20)	FTBL-IS-052-062116-C FTBL-IS-083-062116 FTBL-IS-059-062116 FTBL-IS-058-062116 FTBL-IS-052-062116-A FTBL-IS-051-062116 FTBL-IS-100-062116	UJ (all non-detects)	A

IV. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by ADR with the exception of several metals and explosives. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1606412/ 6020A	ICB/CCB	Beryllium	0.011 ug/L	FTBL-IS-070-061016 FTBL-IS-062-061016 FTBL-IS-061-061016 FTBL-IS-054-061016 FTBL-IS-072-061016 FTBL-IS-064-061016

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1606412/ 6020A	ICB/CCB	Antimony Lead Nickel	0.007 ug/L 0.005 ug/L 0.06 ug/L	EB061016
K1606956/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	EB062116

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1606412/ 6020A	EB061016	Lead Nickel	0.014 ug/L 0.04 ug/L	0.014U ug/L 0.05U ug/L
K1606956/ 6020A	EB062116	Antimony Beryllium	0.013 ug/L 0.012 ug/L	0.013U ug/L 0.012U ug/L

V. Field Blanks

Two equipment blanks were collected and analyzed for metals and explosives. All equipment blanks had detections for several metals and explosives. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blanks, therefore no data were qualified.

VI. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met. The criteria for analysis were met.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives and metals in two MS/MSD pairs. No data were qualified for metals %R when the post-digestion spike %R or serial dilution %D were within QC limits. The remainder of the associated sample results were qualified as estimated (UJ). The details are provided in Enclosure I.

IX. Replicate Sample Analysis

Laboratory replicates (REP) sample analysis was performed on an associated project sample. Results were within QC limits.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XI. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of two LCS/LCSD pairs for explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. Several explosives results in several samples were qualified as rejected (R) due to SRM %Rs grossly outside QC limits (i.e., $\leq 10\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XII. Field Triplicates

Two sets of field triplicates were collected and analyzed for explosives and metals. All RSDs were within QC limits with the exception of several metals in one triplicate. No samples were qualified when one or more results were less than the limit of quantitation (LOQ). The field triplicate comparisons are provided in Enclosures I.

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1606412/ 8330B	EB061016	Pentaerythritol tetranitrate	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1606412/ 8330B	FTBL-IS-070-061016	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606412/ 8330B	FTBL-IS-062-061016 FTBL-IS-064-061016	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606412/ 8330B	FTBL-IS-072-061016	Nitrobenzene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606956/ 8330B	FTBL-IS-100-062116	2-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606956/ 8330B	EB062116	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to severe SRM %R exceedances, data were qualified as rejected in six samples.

Due to SRM %R exceedances, data were qualified as estimated in seventeen samples.

Due to MS/MSD %R, data were qualified as estimated in one sample.

Due to LCS/LCSD %R, data were qualified as estimated in two samples.

Due to results not being confirmed, data were qualified as presumptive in seven samples.

Due to CCV %D, data were qualified as estimated in eleven samples.

Due to results reported below the LOQ, data were qualified as estimated in seven samples.

Due to laboratory blank contamination, data were qualified as non-detect in five samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
10-Jun-2016	FTBL-IS-070-061016	K1606412-001	N	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-070-061016	K1606412-001	N	METHOD	8330B	III
10-Jun-2016	FTBL-IS-070-061016MS	K1606412-001MS	MS	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-070-061016MSD	K1606412-001SD	MSD	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-070-061016REP1	KWG1605169-1	REP	METHOD	8330B	III
10-Jun-2016	FTBL-IS-070-061016REP2	KWG1605169-2	REP	METHOD	8330B	III
10-Jun-2016	FTBL-IS-070-061016MS	KWG1605169-3	MS	METHOD	8330B	III
10-Jun-2016	FTBL-IS-070-061016MSD	KWG1605169-4	MSD	METHOD	8330B	III
10-Jun-2016	FTBL-IS-062-061016	K1606412-002	N	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-062-061016	K1606412-002	N	METHOD	8330B	III
10-Jun-2016	FTBL-IS-061-061016	K1606412-003	N	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-061-061016	K1606412-003	N	METHOD	8330B	III
10-Jun-2016	FTBL-IS-054-061016	K1606412-004	N	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-054-061016	K1606412-004	N	METHOD	8330B	III
10-Jun-2016	FTBL-IS-072-061016	K1606412-005	N	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-072-061016	K1606412-005	N	METHOD	8330B	III
10-Jun-2016	FTBL-IS-064-061016	K1606412-006	N	EPA 3050B	6020A	III
10-Jun-2016	FTBL-IS-064-061016	K1606412-006	N	METHOD	8330B	III
10-Jun-2016	EB061016	K1606412-007	EB	CLFAA	6020A	III
10-Jun-2016	EB061016	K1606412-007	EB	METHOD	8330B	III
21-Jun-2016	EB 062116	K1606956-012	EB	CLFAA	6020A	III
21-Jun-2016	EB 062116	K1606956-012	EB	METHOD	8330B	III
21-Jun-2016	FTBL-IS-059-062116	K1606956-007	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-059-062116	K1606956-007	N	METHOD	8330B	III
21-Jun-2016	FTBL-IS-058-062116	K1606956-008	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-058-062116	K1606956-008	N	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
21-Jun-2016	FTBL-IS-052-062116-A	K1606956-009	FT	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-052-062116-A	K1606956-009	FT	METHOD	8330B	III
21-Jun-2016	FTBL-IS-100-062116	K1606956-011	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-100-062116	K1606956-011	N	METHOD	8330B	III
21-Jun-2016	FTBL-IS-051-062116	K1606956-010	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-051-062116	K1606956-010	N	METHOD	8330B	III
21-Jun-2016	FTBL-IS-083-062116	K1606956-006	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-083-062116	K1606956-006	N	METHOD	8330B	III
21-Jun-2016	FTBL-IS-082-062116-B	K1606956-001	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-082-062116-B	K1606956-001	N	METHOD	8330B	III
21-Jun-2016	FTBL-IS-082-062116-BMS	K1606956-001MS	MS	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-082-062116-BMSD	K1606956-001SD	MSD	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-082-062116-A	K1606956-003	FT	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-082-062116-A	K1606956-003	FT	METHOD	8330B	III
21-Jun-2016	FTBL-IS-082-062116-BREP1	KWG1605463-1	REP	METHOD	8330B	III
21-Jun-2016	FTBL-IS-082-062116-BREP2	KWG1605463-2	REP	METHOD	8330B	III
21-Jun-2016	FTBL-IS-082-062116-BMS	KWG1605463-6	MS	METHOD	8330B	III
21-Jun-2016	FTBL-IS-082-062116-BMSD	KWG1605463-7	MSD	METHOD	8330B	III
21-Jun-2016	FTBL-IS-052-062116-B	K1606956-004	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-052-062116-B	K1606956-004	N	METHOD	8330B	III
21-Jun-2016	FTBL-IS-082-062116-C	K1606956-002	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-082-062116-C	K1606956-002	N	METHOD	8330B	III
21-Jun-2016	FTBL-IS-052-062116-C	K1606956-005	N	EPA 3050B	6020A	III
21-Jun-2016	FTBL-IS-052-062116-C	K1606956-005	N	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606412

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB061016 **Collected:** 6/10/2016 3:50:00 PM

Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.07	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
NICKEL	0.04	J	0.05	LOD	0.20	LOQ	ug/L	U	Cb
LEAD	0.014	J	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-054-061016 **Collected:** 6/10/2016 12:30:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.067	U,i	0.067	LOD	0.081	LOQ	mg/Kg	R	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-061-061016 **Collected:** 6/10/2016 12:25:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 1 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606412

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-061-061016

Collected: 6/10/2016 12:25:00
PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.048	U,i	0.048	LOD	0.082	LOQ	mg/Kg	R	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-062-061016

Collected: 6/10/2016 10:55:00
AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.042	U	0.042	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	R	Lcs, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.042	U,i	0.042	LOD	0.083	LOQ	mg/Kg	R	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	R	Lcs, Lcs
NITROGLYCERIN	0.062	BJN	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 2 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606412

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-064-061016

Collected: PM

6/10/2016 2:30:00

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.068	U,i	0.068	LOD	0.081	LOQ	mg/Kg	R	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, Lcs
NITROGLYCERIN	0.091	BJN	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-070-061016

Collected: AM

6/10/2016 10:45:00

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U,i	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0058	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, Lcs, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 3 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606412

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-070-061016
Collected: 6/10/2016 10:45:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-072-061016
Collected: 6/10/2016 2:25:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.056	U,i	0.056	LOD	0.081	LOQ	mg/Kg	R	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0083	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, Lcs, ProfJdg
NITROGLYCERIN	0.087	BJN	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJdg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB061016
Collected: 6/10/2016 3:50:00 PM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 4 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606412

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB061016 6/10/2016 3:50:00
Collected: PM Analysis Type: Initial/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.82	JN	1.0	LOD	1.0	LOQ	ug/L	NJ	RI, ProfJdg

SDG: K1606956

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-052-062116-A 6/21/2016 10:30:00
Collected: AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.189	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft
COPPER	16.1	=	0.10	LOD	0.10	LOQ	mg/Kg	J	Ft
LEAD	25.8	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-052-062116-B 6/21/2016 2:00:00
Collected: PM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.369	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft
COPPER	22.4	=	0.10	LOD	0.10	LOQ	mg/Kg	J	Ft
LEAD	60.2	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-052-062116-C 6/21/2016 2:30:00
Collected: PM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.318	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft
COPPER	27.0	=	0.10	LOD	0.10	LOQ	mg/Kg	J	Ft
LEAD	42.2	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 5 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606956

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB 062116

Collected: 6/21/2016 12:00:00
AM

Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.013	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
BERYLLIUM	0.012	J	0.020	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.11	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-051-062116

Collected: 6/21/2016 12:30:00
PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ccv
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-052-062116-A

Collected: 6/21/2016 10:30:00
AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ccv
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-052-062116-B

Collected: 6/21/2016 2:00:00
PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs, Ccv
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 6 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606956

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-052-062116-C **Collected:** 6/21/2016 2:30:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ccv
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-058-062116 **Collected:** 6/21/2016 9:00:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ccv
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-059-062116 **Collected:** 6/21/2016 9:00:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ccv
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-082-062116-A **Collected:** 6/21/2016 1:30:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs, Ccv
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-082-062116-B **Collected:** 6/21/2016 1:30:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Ms, Lcs, Ccv

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 7 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606956

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-082-062116-B
Collected: PM 6/21/2016 1:30:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.020	U	0.020	LOD	0.039	LOQ	mg/Kg	UJ	Ms
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-082-062116-C
Collected: PM 6/21/2016 2:30:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs, Ccv
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-083-062116
Collected: PM 6/21/2016 12:50:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ccv
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-100-062116
Collected: AM 6/21/2016 11:05:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ccv
2-NITROTOLUENE	0.013	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 8 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606956

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB 062116

6/21/2016 12:00:00
Collected: AM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U,i	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.1	N	1.0	LOD	1.0	LOQ	ug/L	NJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 9 of 10

Data Qualifier Summary

Lab Reporting Batch ID: K1606412, K1606956

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A_rev,
K1606956_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
Ft	Field Triplicate Precision
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 12:30:11 PM

ADR version 1.9.0.325

Page 10 of 10

Enclosure I
Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

K1606412

Method Blank Outlier Report

Lab Reporting Batch ID: K1606412

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605169-5	7/23/2016 11:01:00 AM	2,6-DINITROTOLUENE NITROGLYCERIN	0.025 mg/Kg 0.10 mg/Kg	FTBL-IS-054-061016 FTBL-IS-061-061016 FTBL-IS-062-061016 FTBL-IS-064-061016 FTBL-IS-070-061016 FTBL-IS-072-061016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-062-061016(Initial)	NITROGLYCERIN	0.062 mg/Kg	0.062U mg/Kg
FTBL-IS-064-061016(Initial)	NITROGLYCERIN	0.091 mg/Kg	0.091U mg/Kg
FTBL-IS-072-061016(Initial)	NITROGLYCERIN	0.087 mg/Kg	0.087U mg/Kg

Method: 8330B
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604697-3	6/24/2016 7:03:00 AM	2,6-DINITROTOLUENE	0.058 ug/L	EB061016

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 2:36:57 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606412

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-070-061016MS (Dry) FTBL-IS-070-061016MSD (Dry) (FTBL-IS-070-061016)	ANTIMONY	30	33	72.00-124.00	-	ANTIMONY	No Qual, Post Spike within limits 100%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 2:38:17 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606412

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605169-6 KWG1605169-7 (FTBL-IS-054-061016 FTBL-IS-061-061016 FTBL-IS-062-061016 FTBL-IS-064-061016 FTBL-IS-070-061016 FTBL-IS-072-061016)	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	7 2 6 0 0 7	- - - - - -	71.00-120.00 70.00-124.00 67.00-129.00 67.00-129.00 73.00-124.00 72.00-128.00	- - - - - -	2,4,6-TRINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J(all detects) R(all non-detects)
KWG1605169-6 (FTBL-IS-054-061016 FTBL-IS-061-061016 FTBL-IS-062-061016 FTBL-IS-064-061016 FTBL-IS-070-061016 FTBL-IS-072-061016)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE Tetryl	38 22 49 53 51 37 23 12 19	- - - - - - - - -	80.00-116.00 73.00-119.00 75.00-121.00 79.00-117.00 71.00-123.00 86.00-118.00 64.00-127.00 71.00-124.00 68.00-135.00	- - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604697-1 KWG1604697-2 (EB061016)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	76 67 76 70 69 61 -	- - - - - - -	78.00-120.00 77.00-127.00 79.00-120.00 73.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00	- 22 (20.00) - 24 (20.00) 21 (20.00) - 22 (20.00)	1,3-DINITROBENZENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE HMX NITROGLYCERIN	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 2:37:01 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606412

Laboratory: ALS_K

EDD Filename: K1606412_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-062-061016	NITROGLYCERIN	BJN	0.062	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-064-061016	NITROGLYCERIN	BJN	0.091	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-070-061016	NITROBENZENE	JN	0.0058	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-072-061016	NITROBENZENE NITROGLYCERIN	JN BJN	0.0083 0.087	0.081 0.21	LOQ LOQ	mg/Kg mg/Kg	J (all detects)

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB061016	COPPER	J	0.07	0.10	LOQ	ug/L	J (all detects)
	LEAD	J	0.014	0.020	LOQ	ug/L	
	NICKEL	J	0.04	0.20	LOQ	ug/L	

Method: 8330B
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB061016	Pentaerythritol Tetranitrate (PETN)	JN	0.82	1.0	LOQ	ug/L	J (all detects)

LDC #: 36870A4a
 SDG #: K1606412
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/11/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (SB out, no qual, PS in)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-070-061016	K1606412-001	Soil	06/10/16
2	FTBL-IS-062-061016	K1606412-002	Soil	06/10/16
3	FTBL-IS-061-061016	K1606412-003	Soil	06/10/16
4	FTBL-IS-054-061016	K1606412-004	Soil	06/10/16
5	FTBL-IS-072-061016	K1606412-005	Soil	06/10/16
6	FTBL-IS-064-061016	K1606412-006	Soil	06/10/16
7	EB061016	K1606412-007	Water	06/10/16
8	FTBL-IS-070-061016MS	K1606412-001MS	Soil	06/10/16
9	FTBL-IS-070-061016MSD	K1606412-001MSD	Soil	06/10/16
10				
11				
12				
13				

Notes:

LDC #: 36870ALG

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: (of)

Reviewer:

2nd reviewer: Sh

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dil

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: All Soil

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers									
Be		0.011	0.0275										

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Water

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	7									
Sb		0.007	0.035										
Pb		0.005	0.025	0.014									
Ni		0.06	0.3	0.04 / 0.05									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36870A40
 SDG #: K1606412
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 6/8/16
 Page: 1 of 1
 Reviewer: JVG
 2nd Reviewer: SM

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICV $\leq 15\%$ \checkmark ICV $\leq 20\%$
III.	Continuing calibration	A	CCV $\leq 20\%$
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /LT	N/N	LT = 1/10/11
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SW	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

*ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
+1	FTBL-IS-070-061016	K1606412-001	Soil	06/10/16
+1	FTBL-IS-062-061016	K1606412-002	Soil	06/10/16
3	FTBL-IS-061-061016	K1606412-003	Soil	06/10/16
4	FTBL-IS-054-061016	K1606412-004	Soil	06/10/16
5	FTBL-IS-072-061016	K1606412-005	Soil	06/10/16
6	FTBL-IS-064-061016	K1606412-006	Soil	06/10/16
+1	EB061016	K1606412-007	Water	06/10/16
8	FTBL-IS-070-061016MS	K1606412-001MS	Soil	06/10/16
9	FTBL-IS-070-061016MSD	K1606412-001MSD	Soil	06/10/16
10	FTBL-IS-070-061016DUP	K1606412-001DUP	Soil	06/10/16
11	FTBL-IS-070-061016TRP	K1606412-001TRP	Soil	06/10/16
12				
13				
14				

Notes:

+1	KWG1604697-3	+1	KWG1605169-5 Storage BIK		
-1	KWG1605169-8				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	X. EPN	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	Y. Azinphos-methyl	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	Z. Coumaphos	EE. Ethyl Benzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	AA. Parathion	SSS. O-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	BB. Trichloronate	RRR. MP-Xylene
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	CC. Trichlorinate	GG. Total Xylene
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotep	DD. Trifluralin	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	EE. Def	8315A
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	FF. Prowl	A. Formaldehyde
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	GG. Ethion	B. Acetaldehyde
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	HH. Famphur	C. Benzaldehyde
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	II. Phosmet	D. Butyraldehyde
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	JJ. Tetrachlorvinphos	
N. Naphthalene	N. 4-Nitrotoluene	N.	N. Malathion	KK. Demeton (total)	
O. Phenanthrene	O. Nitroglycerin	O.	O. Chlorpyrifos		
P. Pyrene	P. Picric acid	P.	P. Fenthion		
Q.	Q. 2,4-Dinitrophenol	Q.	Q. Parathion-ethyl		
R.	R. 3,5-Dinitroaniline		R. Trichlormate		
S.	S. 2-Nitrophenol		S. Merphos		
	T. 4-Nitrophenol		T. Stirofos		
	U. Picramic acid		U. Tokuthion		
	V. PETN		V. Fensulfothion		
	W. Pentaerythritol tetranitrate		W. Bolstar		

Notes: _____

LDC #: 36870 A

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: SM

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only☒ Y ☐ N N/A

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

☒ Y ☐ N N/A

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

☒ Y ☐ N N/ADid the percent difference of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings below.

#	Compound Name	Sample ID	%RPD/%D Between Two Columns/Detectors Limit ($\leq 40\%$)	Qualifications
	W	7	Not confirmed	NJ det / A
	F	1		
	O	2		
	F, O	5		
	O	6		

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1606956

Method Blank Outlier Report

Lab Reporting Batch ID: K1606956

Laboratory: ALS_K

EDD Filename: K1606956_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608104-01	8/4/2016 1:16:00 AM	LEAD ZINC	0.07 mg/Kg 0.2 mg/Kg	FTBL-IS-051-062116 FTBL-IS-052-062116-A FTBL-IS-052-062116-B FTBL-IS-052-062116-C FTBL-IS-058-062116 FTBL-IS-059-062116 FTBL-IS-082-062116-A FTBL-IS-082-062116-B FTBL-IS-082-062116-C FTBL-IS-083-062116 FTBL-IS-100-062116

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB 062116

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB 062116(Initial/TOT)	BERYLLIUM	0.012 ug/L	0.012U ug/L

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605463-5	7/23/2016 10:30:00 PM	1,3-DINITROBENZENE	0.077 mg/Kg	FTBL-IS-051-062116 FTBL-IS-052-062116-A FTBL-IS-052-062116-B FTBL-IS-052-062116-C FTBL-IS-058-062116 FTBL-IS-059-062116 FTBL-IS-082-062116-A FTBL-IS-082-062116-B FTBL-IS-082-062116-C FTBL-IS-083-062116 FTBL-IS-100-062116

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605195-3	7/22/2016 6:06:00 PM	2,6-DINITROTOLUENE	0.11 ug/L	EB 062116

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 2:37:18 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606956

Laboratory: ALS_K

EDD Filename: K1606956_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-082-062116-BMS (Dry) FTBL-IS-082-062116-BMSD (Dry) (FTBL-IS-082-062116-B)	ANTIMONY	30	32	72.00-124.00	-	ANTIMONY	No Qual, Post Spike within limits 105%

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-082-062116-BMS (FTBL-IS-082-062116-B)	3,5-Dinitroaniline HMX	79 71	- -	86.00-118.00 74.00-124.00	- -	3,5-Dinitroaniline HMX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 2:39:05 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606956

Laboratory: ALS_K

EDD Filename: K1606956_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605463-3 (FTBL-IS-051-062116 FTBL-IS-052-062116-A FTBL-IS-052-062116-B FTBL-IS-052-062116-C FTBL-IS-058-062116 FTBL-IS-059-062116 FTBL-IS-082-062116-A FTBL-IS-082-062116-B FTBL-IS-082-062116-C FTBL-IS-083-062116 FTBL-IS-100-062116)	3,5-Dinitroaniline NITROGLYCERIN Tetryl	74 50 51	- - -	86.00-118.00 73.00-124.00 68.00-135.00	- - -	3,5-Dinitroaniline NITROGLYCERIN Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605195-1 KWG1605195-2 (EB 062116)	2-NITROTOLUENE 3-NITROTOLUENE	68 69	69 71	70.00-127.00 73.00-125.00	- -	2-NITROTOLUENE 3-NITROTOLUENE	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 2:37:21 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1606956

Laboratory: ALS_K

EDD Filename: K1606956_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-082-062116-A	FTBL- IS-082-062116-B	FTBL- IS-082-062116-C			
ANTIMONY	0.194	0.151	0.204	15.39	20.00	No Qualifiers Applied
ARSENIC	7.38	7.88	7.18	4.82	20.00	
BERYLLIUM	1.14	1.17	1.15	1.32	20.00	
COPPER	17.0	17.8	17.3	2.33	20.00	
LEAD	26.1	26.9	27.3	2.28	20.00	
NICKEL	10.8	11.0	10.6	1.85	20.00	
ZINC	53.7	55.3	55.1	1.59	20.00	
Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-052-062116-A	FTBL- IS-052-062116-B	FTBL- IS-052-062116-C			
ARSENIC	6.03	5.67	5.52	4.57	20.00	No Qualifiers Applied
BERYLLIUM	1.10	1.17	1.16	3.31	20.00	
NICKEL	11.1	13.2	12.4	8.66	20.00	
ZINC	64.6	86.9	85.1	15.71	20.00	
ANTIMONY	0.189	0.369	0.318	31.77	20.00	J(all detects)
COPPER	16.1	22.4	27.0	25.06	20.00	
LEAD	25.8	60.2	42.2	40.26	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
 NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 5:17:25 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606956

Laboratory: ALS_K

EDD Filename: K1606956_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-100-062116	2-NITROTOLUENE	JN	0.013	0.081	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB 062116	ANTIMONY	J	0.013	0.050	LOQ	ug/L	J (all detects)
	BERYLLIUM	J	0.012	0.020	LOQ	ug/L	
	NICKEL	J	0.11	0.20	LOQ	ug/L	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

8/29/2016 2:37:23 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36870B4a
 SDG #: K1606956
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/19/16
 Page: 1 of 1
 Reviewer: *[Signature]*
 2nd Reviewer: *[Signature]*

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (Sh %d Rat, no gravel, PS in)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-082-062116-B	K1606956-001	Soil	06/21/16
2	FTBL-IS-082-062116-C	K1606956-002	Soil	06/21/16
3	FTBL-IS-082-062116-A	K1606956-003	Soil	06/21/16
4	FTBL-IS-052-062116-B	K1606956-004	Soil	06/21/16
5	FTBL-IS-052-062116-C	K1606956-005	Soil	06/21/16
6	FTBL-IS-083-062116	K1606956-006	Soil	06/21/16
7	FTBL-IS-059-062116	K1606956-007	Soil	06/21/16
8	FTBL-IS-058-062116	K1606956-008	Soil	06/21/16
9	FTBL-IS-052-062116-A	K1606956-009	Soil	06/21/16
10	FTBL-IS-051-062116	K1606956-010	Soil	06/21/16
11	FTBL-IS-100-062116	K1606956-011	Soil	06/21/16
12	EB062116	K1606956-012	Water	06/21/16
13	FTBL-IS-082-062116-BMS	K1606956-001MS	Soil	06/21/16
14	FTBL-IS-082-062116-BMSD	K1606956-001MSD	Soil	06/21/16
15				

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 36870B4a

VALIDATION FINDINGS WORKSHEET

PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5xdil

Reviewer: [Signature]

2nd Reviewer: [Signature]

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Water

				Sample Identification										
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	12										
Sb		0.020	0.1	0.013										
Be		0.009	0.045	0.012										
Pb		0.008	0.04											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36870B40
SDG #: K1606956
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 08/18/16
Page: 1 of 1
Reviewer: JVG
2nd Reviewer: SM

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICAL $\leq 15\%$ \checkmark ICV $\leq 20\%$
III.	Continuing calibration	SW	CCV $\leq 20\%$
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	LT	LT = 1/15/16
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-082-062116-B	K1606956-001	Soil	06/21/16
2	FTBL-IS-082-062116-C	K1606956-002	Soil	06/21/16
3	FTBL-IS-082-062116-A	K1606956-003	Soil	06/21/16
4	FTBL-IS-052-062116-B	K1606956-004	Soil	06/21/16
5	FTBL-IS-052-062116-C	K1606956-005	Soil	06/21/16
6	FTBL-IS-083-062116	K1606956-006	Soil	06/21/16
7	FTBL-IS-059-062116	K1606956-007	Soil	06/21/16
8	FTBL-IS-058-062116	K1606956-008	Soil	06/21/16
9	FTBL-IS-052-062116-A	K1606956-009	Soil	06/21/16
10	FTBL-IS-051-062116	K1606956-010	Soil	06/21/16
11	FTBL-IS-100-062116	K1606956-011	Soil	06/21/16
12	EB062116	K1606956-012	Water	06/21/16
13	FTBL-IS-082-062116-BMS	K1606956-001MS	Soil	06/21/16
14	FTBL-IS-082-062116-BMSD	K1606956-001MSD	Soil	06/21/16
15	FTBL-IS-082-062116-BDUP	K1606956-001DUP	Soil	06/21/16
16	FTBL-IS-082-062116-BTRP	K1606956-001TRP	Soil	06/21/16
17				

LDC #: 36870B40
SDG #: K1606956
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 08/18/16
Page: 7 of 7
Reviewer: JVC
2nd Reviewer: SM

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
18				
19				
20				
21				

Notes:

+	KWG1605195-3					
-	KWG1605463-9					
+	KWG1605463-4 Storage Blk					
-	KWG1605463-5	✓				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	X. EPN	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	Y. Azinphos-methyl	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	Z. Coumaphos	EE. Ethyl Benzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	AA. Parathion	SSS. O-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	BB. Trichloronate	RRR. MP-Xylene
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	CC. Trichlorinate	GG. Total Xylene
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotep	DD. Trifluralin	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	EE. Def	8315A
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	FF. Prowl	A. Formaldehyde
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	GG. Ethion	B. Acetaldehyde
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	HH. Fampnur	C. Benzaldehyde
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	II. Phosmet	D. Butyraldehyde
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	JJ. Tetrachlorvinphos	
N. Naphthalene	N. 4-Nitrotoluene	N.	N. Malathion	KK. Demeton (total)	
O. Phenanthrene	O. Nitroglycerin	O.	O. Chlorpyrifos		
P. Pyrene	P. Picric acid	P.	P. Fenthion		
Q.	Q. 2,4-Dinitrophenol	Q.	Q. Parathion-ethyl		
R.	R. 3,5-Dinitroaniline		R. Trichlorate		
S.	S. 2-Nitrophenol		S. Merphos		
	T. 4-Nitrophenol		T. Stirofos		
	U. Picramic acid		U. Tokuthion		
	V. PETN		V. Fensulfothion		
			W. Bolstar		

Notes: _____

LDC #: 50070

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

Page: 1 of 1

Reviewer: JVG

2nd Reviewer:

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

What type of continuing calibration calculation was performed? %D or %R

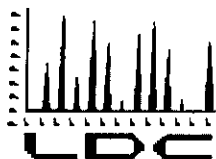
Y N N/A Were continuing calibration standards analyzed at the required frequencies?

Y N N/A Did the continuing calibration standards meet the %D / %R validation criteria of <20.0% / 80-120%?

Level IV Only

Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

[illegible]



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 16, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 22, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #36919:

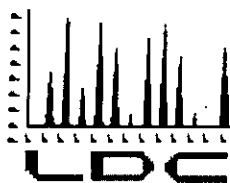
SDG

Fraction:

K1606648, K1606708, K1606753	Metals, Explosives, Perchlorate
K1606832, K1607019, K1607034	
K1607146, K1607266	

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

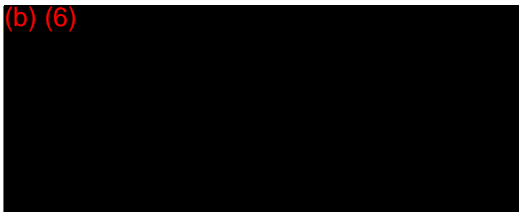
- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014



Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)



Project Manager/Senior Chemist

L:\Arcadis\Fort Bliss-Castner Range\36919ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

**SDGs: K1606648, K1606708, K1606753, K1606832,
K1607019, K1607034, K1607146, and
K1607266**

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 8, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Metals by EPA SW 846 Method 6020A

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

Perchlorate by EPA SW 846 Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, field blank, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), duplicate sample analysis (DUP), serial dilution, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), sample reference materials (SRM), field triplicates, and internal standards. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the methods.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the methods were met with the following exceptions:

SDG/ Method	Date	Standard	Compound	%D (limits)	Associated Samples	Flag	A or P
K1607146/ 8330B	07/24/16	0718000262	4-Nitrotoluene	37 (≤20)	EB062716	UJ (all non-detects)	A

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by ADR with the exception of lead and several explosives. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1606648/ 6020A	ICB/CCB	Beryllium	0.011 ug/L	FTBL-IS-030-061516-A FTBL-IS-030-061516-B FTBL-IS-030-061516-C FTBL-IS-030-061516-A(1105)
K1606648/ 6020A	ICB/CCB	Beryllium	0.020 ug/L	FTBL-IS-030-061516-B(1110) FTBL-IS-030-061516-C(1215) FTBL-IS-028-061516 FTBL-IS-029-061516

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1606648/ 6020A	ICB/CCB	Antimony Lead	0.015 ug/L 0.007 ug/L	All water samples in SDG K1606648
K1606708/ 6020A	ICB/CCB	Beryllium	0.020 ug/L	All soil samples in SDG K1606708
K1606708/ 6020A	ICB/CCB	Lead Antimony	0.007 ug/L 0.015 ug/L	All water samples in SDG K1606708
K1606753/ 6020A	ICB/CCB	Beryllium	0.011 ug/L	All soil samples in SDG K1606753
K1606753/ 6020A	ICB/CCB	Antimony Lead	0.015 ug/L 0.007 ug/L	All water samples in SDG K1606753
K1606832/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.008 ug/L 0.008 ug/L	All water samples in SDG K1606832
K1607019/ 6020A	ICB/CCB	Antimony	0.062 ug/L	FTBL-IS-080-062216
K1607019/ 6020A	ICB/CCB	Antimony	0.096 ug/L	FTBL-IS-069-062216 FTBL-IS-097-062216-A FTBL-IS-097-062216-B FTBL-IS-097-062216-C FTBL-IS-081-062216 FTBL-IS-088-062216 FTBL-IS-098-062216 FTBL-IS-099-062216
K1607019/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607019
K1607034/ 6020A	ICB/CCB	Antimony	0.096 ug/L	FTBL-IS-104-062316 FTBL-IS-087-062316 FTBL-IS-066-062316
K1607034/ 6020A	ICB/CCB	Antimony	0.093 ug/L	FTBL-IS-065-062316 FTBL-IS-078-062316 FTBL-IS-067-062316 FTBL-IS-041-062316 FTBL-IS-040-062316 FTBL-IS-039-062316 FTBL-IS-047-062316
K1607034/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.008 ug/L 0.008 ug/L	All water samples in SDG K1607034
K1607146/ 6020A	ICB/CCB	Beryllium	0.011 ug/L	All soil samples in SDG K1607146

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1607146/ 6020A	ICB/CCB	Antimony Barium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607146
K1607266/ 6020A	ICB/CCB	Antimony	0.076 ug/L	FTBL-IS-132-062916
K1607266/ 6020A	ICB/CCB	Antimony	0.062 ug/L	FTBL-IS-139-062916 FTBL-IS-130-062916 FTBL-IS-131-062916 FTBL-IS-138-062916 FTBL-IS-125-062916 FTBL-IS-128-062916 FTBL-IS-124-062916
K1607266/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607266

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1606708/ 6020A	FB061616	Lead	0.040 ug/L	0.040U ug/L
K1606753/ 6020A	EB061716	Lead	0.019 ug/L	0.019U ug/L
K1606832/ 6020A	EB062016	Antimony Lead	0.017 ug/L 0.030 ug/L	0.017U ug/L 0.030U ug/L
K1607019/ 6020A	FTBL-IS-080-062216	Antimony	0.147 mg/Kg	0.147U mg/Kg
K1607019/ 6020A	FTBL-IS-097-062216-A	Antimony	0.147 mg/Kg	0.147U mg/Kg
K1607019/ 6020A	FTBL-IS-097-062216-B	Antimony	0.162 mg/Kg	0.162U mg/Kg
K1607019/ 6020A	FTBL-IS-097-062216-C	Antimony	0.145 mg/Kg	0.145U mg/Kg
K1607019/ 6020A	FTBL-IS-081-062216	Antimony	0.185 mg/Kg	0.185U mg/Kg

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1607019/ 6020A	FTBL-IS-088-062216	Antimony	0.199 mg/Kg	0.199U mg/Kg
K1607019/ 6020A	FTBL-IS-098-062216	Antimony	0.220 mg/Kg	0.220U mg/Kg
K1607019/ 6020A	FTBL-IS-099-062216	Antimony	0.131 mg/Kg	0.131U mg/Kg
K1607019/ 6020A	EB062216	Lead	0.029 ug/L	0.029U ug/L
K1607034/ 6020A	FTBL-IS-104-062316	Antimony	0.146 mg/Kg	0.146U mg/Kg
K1607034/ 6020A	FTBL-IS-087-062316	Antimony	0.203 mg/Kg	0.203U mg/Kg
K1607034/ 6020A	FTBL-IS-066-062316	Antimony	0.136 mg/Kg	0.136U mg/Kg
K1607034/ 6020A	FTBL-IS-065-062316	Antimony	0.121 mg/Kg	0.121U mg/Kg
K1607034/ 6020A	FTBL-IS-078-062316	Antimony	0.129 mg/Kg	0.129U mg/Kg
K1607034/ 6020A	FTBL-IS-067-062316	Antimony	0.181 mg/Kg	0.181U mg/Kg
K1607034/ 6020A	FTBL-IS-041-062316	Antimony	0.194 mg/Kg	0.194U mg/Kg
K1607034/ 6020A	FTBL-IS-040-062316	Antimony	0.152 mg/Kg	0.152U mg/Kg
K1607034/ 6020A	FTBL-IS-039-062316	Antimony	0.196 mg/Kg	0.196U mg/Kg
K1607034/ 6020A	EB062316	Lead	0.010 ug/L	0.010U ug/L
K1607146/ 6020A	EB062716	Antimony Lead	0.013 ug/L 0.016 ug/L	0.013U ug/L 0.016U ug/L
K1607266/ 6020A	FTBL-IS-132-062916	Antimony	0.111 mg/Kg	0.111U mg/Kg
K1607266/ 6020A	FTBL-IS-130-062916	Antimony	0.104 mg/Kg	0.104U mg/Kg

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1607266/ 6020A	FTBL-IS-138-062916	Antimony	0.110 mg/Kg	0.110U mg/Kg
K1607266/ 6020A	FTBL-IS-125-062916	Antimony	0.155 mg/Kg	0.155U mg/Kg
K1607266/ 6020A	FTBL-IS-124-062916	Antimony	0.116 mg/Kg	0.116U mg/Kg
K1607266/ 6020A	EB062916	Lead	0.033 ug/L	0.033U ug/L

VI. Field Blanks

Seven equipment blanks were collected and analyzed for metals and explosives. All equipment blanks had detections for several metals. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

One field blank was collected and analyzed for several metals and explosives. The field blank had detections for several metals. The sample results were not detected or were significantly greater than the concentrations found in the field blank, therefore no data were qualified.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives and metals in eight MS/MSD pairs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R or serial dilution %D were within QC limits. The details are provided in Enclosure I.

X. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore laboratory duplicate analyses were not performed for this SDG.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several LCS/LCSD pairs for explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. 1,3,5-Trinitrobenzene and tetryl results in several samples were qualified as rejected (R) due to SRM %Rs grossly outside QC limits (i.e., $\leq 10\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XIII. Field Triplicates

Four sets of field triplicates were collected and analyzed for metals and explosives. All RSDs were within QC limits with the exception of copper, lead, and beryllium in one triplicate. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The field triplicate comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas and retention times or percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1606648/ 8330B	FTBL-IS-030-061516-B	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606648/ 8330B	FTBL-IS-030-061516-B(1110) FTBL-IS-030-061516-C(1215)	1,3,5-Trinitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606753/ 8330B	FTBL-IS-102-061716	2-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606753/ 8330B	FTBL-IS-101-061716	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606832/ 8330B	EB062016	2,6-Dinitrotoluene 3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects)	A
K1606832/ 8330B	FTBL-IS-042-062016	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1606832/ 8330B	FTBL-IS-043-062016 FTBL-IS-053-062016	HMX	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607019/ 8330B	EB062216	2,6-Dinitrotoluene 4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects)	A
K1607019/ 8330B	FTBL-IS-069-062216	2-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607034/ 8330B	EB062316	2,6-Dinitrotoluene 4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects)	A
K1607034/ 8330B	FTBL-IS-078-062316	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607146/ 8330B	FTBL-IS-137-062716 EB062716	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607146/ 8330B	FTBL-IS-121-062716-A	1,3-Dinitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1607146/ 8330B	FTBL-IS-121-062716-B	2-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607146/ 8330B	FTBL-IS-140-062716-B	1,3,5-Trinitrobenzene Nitrobenzene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects)	A
K1607146/ 8330B	FTBL-IS-129-062716	2-Nitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects)	A
K1607266/ 8330B	FTBL-IS-128-062916 FTBL-IS-124-062916	3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

The results for the dissolved metals sample analysis were greater than the total metals sample analysis as follows:

SDG/ Method	Analyte	Concentration (ug/L)	
		FTBL-SP-05-061716	FTBL-SP-05-061716F
K1606753/ 6020A	Antimony	0.086	0.350

XVI. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Level IV validation for SDG K1606708.

XVII. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to severe SRM %R, data were qualified as rejected in nine samples.

Due to CCV %D, data were qualified as estimated in one sample.

Due to MS/MSD and LCS/LCSD %R, data were qualified as estimated in thirty-four samples.

Due to SRM %R, data were qualified as estimated in fifty-six samples.

Due to field triplicate %RSD, data were qualified as estimated in six samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in twenty-one samples.

Due to results reported below the LOQ, data were qualified as estimated in twenty-seven samples.

Due to laboratory blank contamination, data were qualified as not detected in thirteen samples.

Due to calibration blank contamination, data were qualified as not detected in twenty-eight samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jun-2016	EB061516	K1606648-009	EB	CLFAA	6020A	III
15-Jun-2016	EB061516	K1606648-009	EB	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-A	K1606648-001	FT	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-A	K1606648-001	FT	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-AMS	K1606648-001MS	MS	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-AMS	K1606648-001REMS	MS	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-AMSD	K1606648-001SD	MSD	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-AREP3	KWG1605271-1	REP	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-AREP1	KWG1605271-2	REP	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-AMS	KWG1605271-6	MS	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-AMSD	KWG1605271-7	MSD	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-B	K1606648-002	N	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-B	K1606648-002	N	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-C	K1606648-003	N	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-C	K1606648-003	N	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-A (110	K1606648-004	FT	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-A (110	K1606648-004	FT	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-B (111	K1606648-005	N	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-B (111	K1606648-005	N	METHOD	8330B	III
15-Jun-2016	FTBL-IS-030-061516-C (121	K1606648-006	N	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-030-061516-C (121	K1606648-006	N	METHOD	8330B	III
15-Jun-2016	FTBL-IS-028-061516	K1606648-007	N	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-028-061516	K1606648-007	N	METHOD	8330B	III
15-Jun-2016	FTBL-IS-029-061516	K1606648-008	N	EPA 3050B	6020A	III
15-Jun-2016	FTBL-IS-029-061516	K1606648-008	N	METHOD	6850	III
15-Jun-2016	FTBL-IS-029-061516	K1606648-008	N	METHOD	8330B	III

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MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
15-Jun-2016	FTBL-IS-029-061516MS	KQ1607985-01MS	MS	METHOD	6850	III
15-Jun-2016	FTBL-IS-029-061516MSD	KQ1607985-02SD	MSD	METHOD	6850	III
16-Jun-2016	FTBL-IS-045-061616	K1606708-001	N	EPA 3050B	6020A	IV
16-Jun-2016	FTBL-IS-045-061616	K1606708-001	N	METHOD	6850	IV
16-Jun-2016	FTBL-IS-045-061616	K1606708-001	N	METHOD	8330B	IV
16-Jun-2016	FTBL-IS-045-061616MS	K1606708-001MS	MS	EPA 3050B	6020A	IV
16-Jun-2016	FTBL-IS-045-061616MSD	K1606708-001SD	MSD	EPA 3050B	6020A	IV
16-Jun-2016	FTBL-IS-045-061616REP2	KWG1605327-1	REP	METHOD	8330B	IV
16-Jun-2016	FTBL-IS-045-061616REP1	KWG1605327-10	REP	METHOD	8330B	IV
16-Jun-2016	FTBL-IS-045-061616MS	KWG1605327-13	MS	METHOD	8330B	IV
16-Jun-2016	FTBL-IS-045-061616MSD	KWG1605327-14	MSD	METHOD	8330B	IV
16-Jun-2016	FTBL-IS-036-061616	K1606708-002	N	EPA 3050B	6020A	IV
16-Jun-2016	FTBL-IS-036-061616	K1606708-002	N	METHOD	6850	IV
16-Jun-2016	FTBL-IS-036-061616	K1606708-002	N	METHOD	8330B	IV
16-Jun-2016	FTBL-IS-037-061616	K1606708-003	N	EPA 3050B	6020A	IV
16-Jun-2016	FTBL-IS-037-061616	K1606708-003	N	METHOD	8330B	IV
16-Jun-2016	FTBL-IS-031-061616	K1606708-004	N	EPA 3050B	6020A	IV
16-Jun-2016	FTBL-IS-031-061616	K1606708-004	N	METHOD	8330B	IV
16-Jun-2016	FB061616	K1606708-005	FB	CLFAA	6020A	IV
16-Jun-2016	FB061616	K1606708-005	FB	METHOD	8330B	IV
17-Jun-2016	FTBL-IS-102-061716	K1606753-001	N	EPA 3050B	6020A	III
17-Jun-2016	FTBL-IS-102-061716	K1606753-001	N	METHOD	6850	III
17-Jun-2016	FTBL-IS-102-061716	K1606753-001	N	METHOD	8330B	III
17-Jun-2016	FTBL-IS-102-061716MS	K1606753-001MS	MS	EPA 3050B	6020A	III
17-Jun-2016	FTBL-IS-102-061716RE	K1606753-001RE	N	EPA 3050B	6020A	III
17-Jun-2016	FTBL-IS-102-061716MSD	K1606753-001RES	MSD	EPA 3050B	6020A	III

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
17-Jun-2016	FTBL-IS-102-061716REP1	KWG1605327-2	REP	METHOD	8330B	III
17-Jun-2016	FTBL-IS-102-061716MS	KWG1605327-5	MS	METHOD	8330B	III
17-Jun-2016	FTBL-IS-102-061716MSD	KWG1605327-6	MSD	METHOD	8330B	III
17-Jun-2016	FTBL-IS-102-061716REP2	KWG1605327-9	REP	METHOD	8330B	III
17-Jun-2016	FTBL-IS-101-061716	K1606753-002	N	EPA 3050B	6020A	III
17-Jun-2016	FTBL-IS-101-061716	K1606753-002	N	METHOD	8330B	III
17-Jun-2016	FTBL-IS-101-061716RE	K1606753-002RE	N	EPA 3050B	6020A	III
17-Jun-2016	FTBL-IS-089-061716	K1606753-003	N	EPA 3050B	6020A	III
17-Jun-2016	FTBL-IS-089-061716	K1606753-003	N	METHOD	8330B	III
17-Jun-2016	FTBL-IS-089-061716RE	K1606753-003RE	N	EPA 3050B	6020A	III
17-Jun-2016	FTBL-SP-05-061716	K1606753-006	N	CLFAA	6020A	III
17-Jun-2016	FTBL-SP-05-061716	K1606753-006DISS	N	CLFAA	6020A	III
17-Jun-2016	FTBL-IS-103-061716	K1606753-004	N	EPA 3050B	6020A	III
17-Jun-2016	FTBL-IS-103-061716	K1606753-004	N	METHOD	8330B	III
17-Jun-2016	FTBL-IS-103-061716RE	K1606753-004RE	N	EPA 3050B	6020A	III
17-Jun-2016	EB061716	K1606753-005	EB	CLFAA	6020A	III
17-Jun-2016	EB061716	K1606753-005	EB	METHOD	8330B	III
20-Jun-2016	FTBL-IS-043-062016	K1606832-003	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-043-062016	K1606832-003	N	METHOD	6850	III
20-Jun-2016	FTBL-IS-043-062016	K1606832-003	N	METHOD	8330B	III
20-Jun-2016	FTBL-IS-043-062016RE	K1606832-003RE	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-044-062016	K1606832-005	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-044-062016	K1606832-005	N	METHOD	6850	III
20-Jun-2016	FTBL-IS-044-062016	K1606832-005	N	METHOD	8330B	III
20-Jun-2016	FTBL-IS-044-062016RE	K1606832-005RE	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-053-062016	K1606832-004	N	EPA 3050B	6020A	III

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
20-Jun-2016	FTBL-IS-053-062016	K1606832-004	N	METHOD	8330B	III
20-Jun-2016	FTBL-IS-053-062016RE	K1606832-004RE	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-042-062016	K1606832-001	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-042-062016	K1606832-001	N	METHOD	6850	III
20-Jun-2016	FTBL-IS-042-062016	K1606832-001	N	METHOD	8330B	III
20-Jun-2016	FTBL-IS-042-062016RE	K1606832-001RE	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-042-062016MS	K1606832-001REMS	MS	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-042-062016MSD	K1606832-001SD	MSD	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-042-062016MS	KWG1605374-1	MS	METHOD	8330B	III
20-Jun-2016	FTBL-IS-042-062016MSD	KWG1605374-2	MSD	METHOD	8330B	III
20-Jun-2016	FTBL-IS-042-062016REP1	KWG1605374-7	REP	METHOD	8330B	III
20-Jun-2016	FTBL-IS-042-062016REP2	KWG1605374-8	REP	METHOD	8330B	III
20-Jun-2016	FTBL-IS-060-062016	K1606832-002	N	EPA 3050B	6020A	III
20-Jun-2016	FTBL-IS-060-062016	K1606832-002	N	METHOD	8330B	III
20-Jun-2016	FTBL-IS-060-062016RE	K1606832-002RE	N	EPA 3050B	6020A	III
20-Jun-2016	EB 062016	K1606832-006	EB	CLFAA	6020A	III
20-Jun-2016	EB 062016	K1606832-006	EB	METHOD	8330B	III
22-Jun-2016	FTBL-IS-080-062216	K1607019-001	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-080-062216	K1607019-001	N	METHOD	8330B	III
22-Jun-2016	FTBL-IS-080-062216MS	K1607019-001MS	MS	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-080-062216MSD	K1607019-001SD	MSD	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-081-062216	K1607019-006	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-081-062216	K1607019-006	N	METHOD	8330B	III
22-Jun-2016	FTBL-IS-080-062216REP2	KWG1605497-1	REP	METHOD	8330B	III
22-Jun-2016	FTBL-IS-080-062216REP1	KWG1605497-2	REP	METHOD	8330B	III
22-Jun-2016	FTBL-IS-080-062216MS	KWG1605497-6	MS	METHOD	8330B	III

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
22-Jun-2016	FTBL-IS-080-062216MSD	KWG1605497-7	MSD	METHOD	8330B	III
22-Jun-2016	FTBL-IS-088-062216	K1607019-007	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-088-062216	K1607019-007	N	METHOD	8330B	III
22-Jun-2016	FTBL-IS-069-062216	K1607019-002	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-069-062216	K1607019-002	N	METHOD	8330B	III
22-Jun-2016	FTBL-IS-098-062216	K1607019-008	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-098-062216	K1607019-008	N	METHOD	8330B	III
22-Jun-2016	FTBL-IS-097-062216-A	K1607019-003	FT	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-097-062216-A	K1607019-003	FT	METHOD	8330B	III
22-Jun-2016	FTBL-IS-097-062216-B	K1607019-004	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-097-062216-B	K1607019-004	N	METHOD	8330B	III
22-Jun-2016	FTBL-IS-097-062216-C	K1607019-005	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-097-062216-C	K1607019-005	N	METHOD	8330B	III
22-Jun-2016	FTBL-IS-099-062216	K1607019-009	N	EPA 3050B	6020A	III
22-Jun-2016	FTBL-IS-099-062216	K1607019-009	N	METHOD	8330B	III
22-Jun-2016	EB062216	K1607019-010	EB	CLFAA	6020A	III
22-Jun-2016	EB062216	K1607019-010	EB	METHOD	8330B	III
23-Jun-2016	EB062316	K1607034-011	EB	CLFAA	6020A	III
23-Jun-2016	EB062316	K1607034-011	EB	METHOD	8330B	III
23-Jun-2016	FTBL-IS-104-062316	K1607034-001	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-104-062316	K1607034-001	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-104-062316MS	K1607034-001MS	MS	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-104-062316MSD	K1607034-001SD	MSD	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-041-062316	K1607034-007	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-041-062316	K1607034-007	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-104-062316REP2	KWG1605607-1	REP	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-Jun-2016	FTBL-IS-104-062316REP1	KWG1605607-2	REP	METHOD	8330B	III
23-Jun-2016	FTBL-IS-104-062316MS	KWG1605607-5	MS	METHOD	8330B	III
23-Jun-2016	FTBL-IS-104-062316MSD	KWG1605607-6	MSD	METHOD	8330B	III
23-Jun-2016	FTBL-IS-087-062316	K1607034-002	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-087-062316	K1607034-002	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-040-062316	K1607034-008	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-040-062316	K1607034-008	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-066-062316	K1607034-003	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-066-062316	K1607034-003	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-039-062316	K1607034-009	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-039-062316	K1607034-009	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-065-062316	K1607034-004	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-065-062316	K1607034-004	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-078-062316	K1607034-005	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-078-062316	K1607034-005	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-067-062316	K1607034-006	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-067-062316	K1607034-006	N	METHOD	8330B	III
23-Jun-2016	FTBL-IS-047-062316	K1607034-010	N	EPA 3050B	6020A	III
23-Jun-2016	FTBL-IS-047-062316	K1607034-010	N	METHOD	8330B	III
27-Jun-2016	EB062716	K1607146-009	EB	CLFAA	6020A	III
27-Jun-2016	EB062716	K1607146-009	EB	METHOD	8330B	III
27-Jun-2016	FTBL-IS-140-062716-A	K1607146-004	FT	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-140-062716-A	K1607146-004	FT	METHOD	8330B	III
27-Jun-2016	FTBL-IS-121-062716-A	K1607146-001	FT	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-121-062716-A	K1607146-001	FT	METHOD	8330B	III
27-Jun-2016	FTBL-IS-121-062716-AREP2	KWG1605698-1	REP	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
27-Jun-2016	FTBL-IS-121-062716-AREP1	KWG1605698-2	REP	METHOD	8330B	III
27-Jun-2016	FTBL-IS-121-062716-AMS	KWG1605698-3	MS	METHOD	8330B	III
27-Jun-2016	FTBL-IS-121-062716-AMSD	KWG1605698-4	MSD	METHOD	8330B	III
27-Jun-2016	FTBL-IS-121-062716-B	K1607146-002	N	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-121-062716-B	K1607146-002	N	METHOD	8330B	III
27-Jun-2016	FTBL-IS-140-062716-B	K1607146-005	N	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-140-062716-B	K1607146-005	N	METHOD	8330B	III
27-Jun-2016	FTBL-IS-140-062716-C	K1607146-006	N	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-140-062716-C	K1607146-006	N	METHOD	8330B	III
27-Jun-2016	FTBL-IS-121-062716-C	K1607146-003	N	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-121-062716-C	K1607146-003	N	METHOD	8330B	III
27-Jun-2016	FTBL-IS-129-062716	K1607146-008	N	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-129-062716	K1607146-008	N	METHOD	6850	III
27-Jun-2016	FTBL-IS-129-062716	K1607146-008	N	METHOD	8330B	III
27-Jun-2016	FTBL-IS-137-062716	K1607146-007	N	EPA 3050B	6020A	III
27-Jun-2016	FTBL-IS-137-062716	K1607146-007	N	METHOD	6850	III
27-Jun-2016	FTBL-IS-137-062716	K1607146-007	N	METHOD	8330B	III
27-Jun-2016	FTBL-IS-137-062716MS	KQ1608638-01MS	MS	METHOD	6850	III
27-Jun-2016	FTBL-IS-137-062716MSD	KQ1608638-02SD	MSD	METHOD	6850	III
29-Jun-2016	FTBL-IS-132-062916	K1607266-001	N	EPA 3050B	6020A	III
29-Jun-2016	FTBL-IS-132-062916	K1607266-001	N	METHOD	8330B	III
29-Jun-2016	FTBL-IS-132-062916REP2	KWG1605799-1	REP	METHOD	8330B	III
29-Jun-2016	FTBL-IS-132-062916REP1	KWG1605799-2	REP	METHOD	8330B	III
29-Jun-2016	FTBL-IS-132-062916MS	KWG1605799-5	MS	METHOD	8330B	III
29-Jun-2016	FTBL-IS-132-062916MSD	KWG1605799-6	MSD	METHOD	8330B	III
29-Jun-2016	FTBL-IS-139-062916	K1607266-002	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
29-Jun-2016	FTBL-IS-139-062916	K1607266-002	N	METHOD	8330B	III
29-Jun-2016	FTBL-IS-130-062916	K1607266-003	N	EPA 3050B	6020A	III
29-Jun-2016	FTBL-IS-130-062916	K1607266-003	N	METHOD	6850	III
29-Jun-2016	FTBL-IS-130-062916	K1607266-003	N	METHOD	8330B	III
29-Jun-2016	FTBL-IS-130-062916MS	KQ1608710-01MS	MS	METHOD	6850	III
29-Jun-2016	FTBL-IS-130-062916MSD	KQ1608710-02SD	MSD	METHOD	6850	III
29-Jun-2016	FTBL-IS-131-062916	K1607266-004	N	EPA 3050B	6020A	III
29-Jun-2016	FTBL-IS-131-062916	K1607266-004	N	METHOD	6850	III
29-Jun-2016	FTBL-IS-131-062916	K1607266-004	N	METHOD	8330B	III
29-Jun-2016	FTBL-IS-138-062916	K1607266-005	N	EPA 3050B	6020A	III
29-Jun-2016	FTBL-IS-138-062916	K1607266-005	N	METHOD	6850	III
29-Jun-2016	FTBL-IS-138-062916	K1607266-005	N	METHOD	8330B	III
29-Jun-2016	FTBL-IS-125-062916	K1607266-006	N	EPA 3050B	6020A	III
29-Jun-2016	FTBL-IS-125-062916	K1607266-006	N	METHOD	6850	III
29-Jun-2016	FTBL-IS-125-062916	K1607266-006	N	METHOD	8330B	III
29-Jun-2016	FTBL-IS-124-062916	K1607266-008	N	EPA 3050B	6020A	III
29-Jun-2016	FTBL-IS-124-062916	K1607266-008	N	METHOD	6850	III
29-Jun-2016	FTBL-IS-124-062916	K1607266-008	N	METHOD	8330B	III
29-Jun-2016	FTBL-IS-128-062916	K1607266-007	N	EPA 3050B	6020A	III
29-Jun-2016	FTBL-IS-128-062916	K1607266-007	N	METHOD	6850	III
29-Jun-2016	FTBL-IS-128-062916	K1607266-007	N	METHOD	8330B	III
29-Jun-2016	EB 062916	K1607266-009	EB	CLFAA	6020A	III
29-Jun-2016	EB 062916	K1607266-009	EB	METHOD	8330B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606648

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-030-061516-A Collected: 6/15/2016 8:10:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.924	=	0.020	LOD	0.040	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-030-061516-B Collected: 6/15/2016 8:15:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.873	=	0.020	LOD	0.040	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-030-061516-C Collected: 6/15/2016 9:25:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	1.42	=	0.020	LOD	0.039	LOQ	mg/Kg	J	Ft

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB061516 Collected: 6/15/2016 12:00:00 AM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.07	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 6850

Matrix: Soil

Sample ID: FTBL-IS-029-061516 Collected: 6/15/2016 2:30:00 PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	2.5	J	5.0	LOD	5.0	LOQ	ng/g	J	RI

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 1 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606648

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-028-061516 Collected: 6/15/2016 2:20:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-029-061516 Collected: 6/15/2016 2:30:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-030-061516-A Collected: 6/15/2016 8:10:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 2 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606648

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/15/2016 8:10:00									
Sample ID: FTBL-IS-030-061516-A		Collected: AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

6/15/2016 11:05:00									
Sample ID: FTBL-IS-030-061516-A (1105)		Collected: AM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/15/2016 8:15:00									
Sample ID: FTBL-IS-030-061516-B		Collected: AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.019	BJN	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/15/2016 11:10:00									
Sample ID: FTBL-IS-030-061516-B (1110)		Collected: AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 3 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606648

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/15/2016 11:10:00
Sample ID: FTBL-IS-030-061516-B (1110) Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.055	JN	0.081	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/15/2016 9:25:00
Sample ID: FTBL-IS-030-061516-C Collected: AM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/15/2016 12:15:00
Sample ID: FTBL-IS-030-061516-C (1215) Collected: PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.030	JN	0.081	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 4 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606648

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB061516 Collected: 6/15/2016 12:00:00 AM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs

SDG: K1606708

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: FB061616 Collected: 6/16/2016 3:15:00 PM

Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.07	J	0.05	LOD	0.20	LOQ	ug/L	J	RI
LEAD	0.040	=	0.010	LOD	0.020	LOQ	ug/L	U	Mb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 5 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606708

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-031-061616

Collected: PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-036-061616

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-037-061616

Collected: PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 6 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606708

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/16/2016 12:30:00
Sample ID: FTBL-IS-037-061616 Collected: PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

6/16/2016 9:00:00
Sample ID: FTBL-IS-045-061616 Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

6/16/2016 3:15:00
Sample ID: FB061616 Collected: PM Analysis Type: Initial/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 7 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606708

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: FB061616 Collected: 6/16/2016 3:15:00 PM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs

SDG: K1606753

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB061716 Collected: 6/17/2016 3:00:00 PM

Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.05	J	0.05	LOD	0.20	LOQ	ug/L	J	RI
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI
LEAD	0.019	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

Sample ID: FTBL-SP-05-061716 Collected: 6/17/2016 1:20:00 PM

Analysis Type: Initial/DIS

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.011	J	0.020	LOD	0.020	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-089-061716 Collected: 6/17/2016 12:40:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 8 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606753

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-089-061716 Collected: 6/17/2016 12:40:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-101-061716 Collected: 6/17/2016 11:15:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.030	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-102-061716 Collected: 6/17/2016 9:00:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-NITROTOLUENE	0.010	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-103-061716 Collected: 6/17/2016 2:10:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 9 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606753

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB061716 Collected: 6/17/2016 3:00:00 PM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs

SDG: K1606832

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB 062016 Collected: 6/20/2016 3:30:00 PM

Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.017	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
COPPER	0.09	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
NICKEL	0.04	J	0.05	LOD	0.20	LOQ	ug/L	J	RI
LEAD	0.030	=	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 10 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606832

Method Category: SVOA

Method: 6850

Matrix: Soil

Sample ID: FTBL-IS-044-062016
Collected: 6/20/2016 10:00:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	2.6	J	5.0	LOD	5.0	LOQ	ng/g	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-042-062016
Collected: 6/20/2016 12:00:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.019	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-043-062016
Collected: 6/20/2016 9:45:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.017	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-044-062016
Collected: 6/20/2016 10:00:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-053-062016
Collected: 6/20/2016 11:30:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.017	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 11 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1606832

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-053-062016 Collected: 6/20/2016 11:30:00 AM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-060-062016 Collected: 6/20/2016 1:10:00 PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB 062016 Collected: 6/20/2016 3:30:00 PM Analysis Type: Initial/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.093	BJN	0.20	LOD	0.20	LOQ	ug/L	U	Mb, ProfJudg
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.19	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, ProfJudg

SDG: K1607019

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-080-062216 Collected: 6/22/2016 9:00:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.147	J	0.025	LOD	0.051	LOQ	mg/Kg	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 12 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: METALS

Method: 6020A

Matrix: Soil

6/22/2016 9:00:00									
Sample ID: FTBL-IS-081-062216		Collected: AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.185	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

6/22/2016 10:30:00									
Sample ID: FTBL-IS-088-062216		Collected: AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.199	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

6/22/2016 12:30:00									
Sample ID: FTBL-IS-097-062216-A		Collected: PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.147	J	0.025	LOD	0.051	LOQ	mg/Kg	U	Cb

6/22/2016 12:45:00									
Sample ID: FTBL-IS-097-062216-B		Collected: PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.162	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

6/22/2016 2:00:00									
Sample ID: FTBL-IS-097-062216-C		Collected: PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.145	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

6/22/2016 12:00:00									
Sample ID: FTBL-IS-098-062216		Collected: PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.220	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 13 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: METALS

Method: 6020A

Matrix: Soil

6/22/2016 2:00:00
Sample ID: FTBL-IS-099-062216 Collected: PM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.131	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A

Matrix: Water

6/22/2016 3:30:00
Sample ID: EB062216 Collected: PM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.029	=	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.17	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/22/2016 11:00:00
Sample ID: FTBL-IS-069-062216 Collected: AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.036	U,i	0.036	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.017	JN	0.021	LOD	0.082	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.049	U,i	0.049	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 14 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-069-062216 Collected: 6/22/2016 11:00:00 AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-080-062216 Collected: 6/22/2016 9:00:00 AM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-080-062216 Collected: 6/22/2016 9:00:00 AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 15 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-081-062216 Collected: 6/22/2016 9:00:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U,i	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-088-062216 Collected: 6/22/2016 10:30:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.026	U,i	0.026	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U,i	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 16 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-088-062216 Collected: 6/22/2016 10:30:00 AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-097-062216-A Collected: 6/22/2016 12:30:00 PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.026	U,i	0.026	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U,i	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 17 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-097-062216-B
Collected: PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.022	U,i	0.022	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U,i	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-097-062216-C
Collected: PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.037	U,i	0.037	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.12	U,i	0.12	LOD	0.12	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 18 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-097-062216-C
Collected: 6/22/2016 2:00:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-098-062216
Collected: 6/22/2016 12:00:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.023	U,i	0.023	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U,i	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 19 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607019

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-099-062216

Collected: PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U,i	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB062216

Collected: PM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.098	BJN	0.20	LOD	0.20	LOQ	ug/L	U	Mb, ProfJudg
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.079	JN	0.10	LOD	0.10	LOQ	ug/L	NJ	RI, Lcs, ProfJudg
4-NITROTOLUENE	0.088	JN	0.10	LOD	0.10	LOQ	ug/L	NJ	RI, ProfJudg
NITROGLYCERIN	0.80	JN	1.0	LOD	1.0	LOQ	ug/L	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 20 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607034

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-039-062316		Collected: 6/23/2016 11:30:00 AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.196	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-040-062316		Collected: 6/23/2016 10:00:00 AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.152	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-041-062316		Collected: 6/23/2016 9:00:00 AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.194	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-065-062316		Collected: 6/23/2016 11:35:00 AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.121	J	0.025	LOD	0.051	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-066-062316		Collected: 6/23/2016 11:25:00 AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.136	J	0.025	LOD	0.049	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-067-062316		Collected: 6/23/2016 1:40:00 PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.181	J	0.024	LOD	0.049	LOQ	mg/Kg	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 21 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607034

Method Category: METALS

Method: 6020A

Matrix: Soil

6/23/2016 1:30:00
Sample ID: FTBL-IS-078-062316 Collected: PM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.129	J	0.025	LOD	0.051	LOQ	mg/Kg	U	Cb

6/23/2016 9:05:00
Sample ID: FTBL-IS-087-062316 Collected: AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.203	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

6/23/2016 9:00:00
Sample ID: FTBL-IS-104-062316 Collected: AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.146	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A

Matrix: Water

6/23/2016 12:00:00
Sample ID: EB062316 Collected: AM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.08	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
LEAD	0.010	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.09	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/23/2016 11:30:00
Sample ID: FTBL-IS-039-062316 Collected: AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 22 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607034

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/23/2016 10:00:00									
Sample ID: FTBL-IS-040-062316		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/23/2016 9:00:00									
Sample ID: FTBL-IS-041-062316		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/23/2016 2:00:00									
Sample ID: FTBL-IS-047-062316		Collected: PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/23/2016 11:35:00									
Sample ID: FTBL-IS-065-062316		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

6/23/2016 11:25:00									
Sample ID: FTBL-IS-066-062316		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 23 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607034

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/23/2016 1:40:00									
Sample ID: FTBL-IS-067-062316			Collected: PM		Analysis Type: Initial			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/23/2016 1:30:00									
Sample ID: FTBL-IS-078-062316			Collected: PM		Analysis Type: Initial			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.063	JN	0.21	LOD	0.21	LOQ	mg/Kg	U	Mb, ProfJudg
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

6/23/2016 9:05:00									
Sample ID: FTBL-IS-087-062316			Collected: AM		Analysis Type: Initial			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/23/2016 9:00:00									
Sample ID: FTBL-IS-104-062316			Collected: AM		Analysis Type: Initial			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 24 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607034

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB062316 Collected: 6/23/2016 12:00:00 AM Analysis Type: Initial/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.15	BJN	0.20	LOD	0.20	LOQ	ug/L	U	Mb, ProfJudg
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
3-NITROTOLUENE	0.063	JN	0.10	LOD	0.10	LOQ	ug/L	NJ	RI, Lcs, ProfJudg
4-NITROTOLUENE	0.11	N	0.10	LOD	0.10	LOQ	ug/L	NJ	ProfJudg
NITROGLYCERIN	2.4	N	1.0	LOD	1.0	LOQ	ug/L	NJ	ProfJudg

SDG: K1607146

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-121-062716-A Collected: 6/27/2016 9:10:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	35.9	=	0.10	LOD	0.10	LOQ	mg/Kg	J	Ft
LEAD	473	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-121-062716-B Collected: 6/27/2016 11:00:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	73.9	=	0.10	LOD	0.10	LOQ	mg/Kg	J	Ft
LEAD	74.1	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-121-062716-C Collected: 6/27/2016 12:50:00 PM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	30.7	=	0.10	LOD	0.10	LOQ	mg/Kg	J	Ft
LEAD	73.1	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 25 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607146

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB062716 Collected: 6/27/2016 12:00:00 AM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.013	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
LEAD	0.016	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.08	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-121-062716-A Collected: 6/27/2016 9:10:00 AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.017	BJN	0.041	LOD	0.041	LOQ	mg/Kg	U	Mb, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-121-062716-B Collected: 6/27/2016 11:00:00 AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-NITROTOLUENE	0.019	JN	0.021	LOD	0.081	LOQ	mg/Kg	U	Mb, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.23	U,i	0.23	LOD	0.23	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-121-062716-C Collected: 6/27/2016 12:50:00 PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U,i	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 26 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607146

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/27/2016 2:00:00									
Sample ID: FTBL-IS-129-062716	Collected: PM			Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-NITROTOLUENE	0.016	JN	0.021	LOD	0.081	LOQ	mg/Kg	U	Mb, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.099	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/27/2016 2:10:00									
Sample ID: FTBL-IS-137-062716	Collected: PM			Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.11	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

6/27/2016 9:05:00									
Sample ID: FTBL-IS-140-062716-A	Collected: AM			Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/27/2016 11:15:00									
Sample ID: FTBL-IS-140-062716-B	Collected: AM			Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.050	JN	0.081	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.019	JN	0.021	LOD	0.081	LOQ	mg/Kg	U	Mb, ProfJudg
NITROGLYCERIN	0.097	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 27 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607146

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-140-062716-C
Collected: 6/27/2016 12:45:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB062716
Collected: 6/27/2016 12:00:00 AM

Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.39	LOQ	ug/L	UJ	Lcs
4-NITROTOLUENE	0.10	U	0.10	LOD	0.39	LOQ	ug/L	UJ	Ccv
NITROGLYCERIN	2.2	N	1.0	LOD	1.0	LOQ	ug/L	NJ	ProfJudg

SDG: K1607266

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-124-062916
Collected: 6/29/2016 2:30:00 PM

Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.116	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-125-062916
Collected: 6/29/2016 1:20:00 PM

Analysis Type: Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.155	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 28 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607266

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-130-062916 Collected: 6/29/2016 11:05:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.104	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-132-062916 Collected: 6/29/2016 9:10:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.111	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-138-062916 Collected: 6/29/2016 1:15:00 PM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.110	J	0.025	LOD	0.051	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB 062916 Collected: 6/29/2016 3:30:00 PM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.033	=	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.07	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-124-062916 Collected: 6/29/2016 2:30:00 PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 29 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-124-062916

Collected: PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.036	BJN	0.041	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-125-062916

Collected: PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-128-062916

Collected: PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.039	BJN	0.041	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 30 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607266

Method Category: SVOA

Method: 8330B

Matrix: Soil

6/29/2016 2:45:00									
Sample ID: FTBL-IS-128-062916		Collected: PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/29/2016 11:05:00									
Sample ID: FTBL-IS-130-062916		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/29/2016 11:10:00									
Sample ID: FTBL-IS-131-062916		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 31 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-132-062916 Collected: AM 6/29/2016 9:10:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.058	U,i	0.058	LOD	0.058	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-138-062916 Collected: PM 6/29/2016 1:15:00

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-139-062916 Collected: AM 6/29/2016 9:20:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 32 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607266

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-139-062916
Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.18	J	0.21	LOD	0.21	LOQ	mg/Kg	J	RI, Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 33 of 34

Data Qualifier Summary

Lab Reporting Batch ID: K1606648, K1606708, K1606753,

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev,
K1606708_SEDD2A_rev, K1606753_SEDD2A_rev,
K1606832_SEDD2A_rev, K1607019_SEDD2A_rev,
K1607034_SEDD2A_rev, K1607146_SEDD2A_rev,
K1607266_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
Ft	Field Triplicate Precision
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/12/2016 8:46:22 AM

ADR version 1.9.0.325

Page 34 of 34

Enclosure I
Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

K1606648

Method Blank Outlier Report

Lab Reporting Batch ID: K1606648

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607967-01	7/26/2016 7:03:00 PM	LEAD	0.02 mg/Kg	FTBL-IS-028-061516 FTBL-IS-029-061516 FTBL-IS-030-061516-A FTBL-IS-030-061516-A (1105) FTBL-IS-030-061516-B FTBL-IS-030-061516-B (1110) FTBL-IS-030-061516-C FTBL-IS-030-061516-C (1215)

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607568-01	7/29/2016 7:18:00 AM	LEAD	0.008 ug/L	EB061516

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605271-5	7/19/2016 12:05:00 AM	2,6-DINITROTOLUENE 2-NITROTOLUENE	0.027 mg/Kg 0.0093 mg/Kg	FTBL-IS-028-061516 FTBL-IS-029-061516 FTBL-IS-030-061516-A FTBL-IS-030-061516-A (1105) FTBL-IS-030-061516-B FTBL-IS-030-061516-B (1110) FTBL-IS-030-061516-C FTBL-IS-030-061516-C (1215)

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-030-061516-B(Initial1)	2,6-DINITROTOLUENE	0.019 mg/Kg	0.019U mg/Kg

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604920-3	6/29/2016 9:11:00 AM	Pentaerythritol Tetranitrate (PETN)	1.5 ug/L	EB061516

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 1:55:44 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606648

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-030-061516-AMS (Dry)	ANTIMONY	41	41	72.00-124.00	-	ANTIMONY	No Qual, Sb, PS = 102% Pb, SD in
FTBL-IS-030-061516-AMSD	LEAD	261	61	84.00-118.00	69.3 (20.00)	LEAD	
(Dry)							
(FTBL-IS-030-061516-A)							

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-030-061516-AMS	1,3,5-TRINITROBENZENE	58	79	80.00-116.00	30 (20.00)	1,3,5-TRINITROBENZENE	J(all detects) UJ(all non-detects)
FTBL-IS-030-061516-AMSD	1,3-DINITROBENZENE	66	-	73.00-119.00	23 (20.00)	1,3-DINITROBENZENE	
(FTBL-IS-030-061516-A)	2,4,6-TRINITROTOLUENE	59	-	71.00-120.00	29 (20.00)	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	69	-	75.00-121.00	23 (20.00)	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	63	-	79.00-117.00	26 (20.00)	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	63	-	71.00-123.00	29 (20.00)	2-AMINO-4,6-DINITROTOLU	
	3,5-Dinitroaniline	59	78	86.00-118.00	28 (20.00)	3,5-Dinitroaniline	
	4-Amino-2,6-Dinitrotoluene	60	-	64.00-127.00	27 (20.00)	4-Amino-2,6-Dinitrotoluene	
	HMX	56	73	74.00-124.00	26 (20.00)	HMX	
	NITROGLYCERIN	70	-	73.00-124.00	27 (20.00)	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	68	-	72.00-128.00	31 (20.00)	Pentaerythritol Tetranitrate	
	RDX	62	-	67.00-129.00	23 (20.00)	RDX	
	Tetryl	48	-	68.00-135.00	43 (20.00)	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 2:35:16 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606648

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605271-3	1,3,5-TRINITROBENZENE	72	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J(all detects) UJ(all non-detects)
KWG1605271-8	2,4,6-TRINITROTOLUENE	69	-	71.00-120.00	-	2,4,6-TRINITROTOLUENE	
(FTBL-IS-028-061516	2,6-DINITROTOLUENE	74	-	79.00-117.00	-	2,6-DINITROTOLUENE	
FTBL-IS-029-061516	3,5-Dinitroaniline	69	-	86.00-118.00	-	3,5-Dinitroaniline	
FTBL-IS-030-061516-A	HMX	67	-	74.00-124.00	-	HMX	
FTBL-IS-030-061516-A (1105)	Tetryl	52	-	68.00-135.00	-	Tetryl	
FTBL-IS-030-061516-B							
FTBL-IS-030-061516-B (1110)							
FTBL-IS-030-061516-C							
FTBL-IS-030-061516-C (1215))							

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604920-1	1,3,5-TRINITROBENZENE	-	68	73.00-125.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
KWG1604920-2	1,3-DINITROBENZENE	76	66	78.00-120.00	-	1,3-DINITROBENZENE	
(EB061516)	2,4,6-TRINITROTOLUENE	-	64	71.00-123.00	-	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	-	69	78.00-120.00	-	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	63	58	77.00-127.00	-	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	77	65	79.00-120.00	-	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	68	61	70.00-127.00	-	2-NITROTOLUENE	
	3,5-Dinitroaniline	-	64	71.00-117.00	-	3,5-Dinitroaniline	
	3-NITROTOLUENE	69	60	73.00-125.00	-	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	-	66	76.00-125.00	-	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	67	60	71.00-127.00	-	4-NITROTOLUENE	
	HMX	64	54	65.00-135.00	-	HMX	
	NITROGLYCERIN	-	69	74.00-127.00	-	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	-	72	73.00-127.00	-	Pentaerythritol Tetranitrate (PETN)	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 4:03:28 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1606648

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-030-061516-A	FTBL- IS-030-061516-B	FTBL- IS-030-061516-C			
ANTIMONY	0.189	0.208	0.186	6.14	20.00	No Qualifiers Applied
ARSENIC	6.51	6.87	6.26	4.68	20.00	
BERYLLIUM	0.951	1.01	0.964	3.18	20.00	
COPPER	18.5	19.9	19.2	3.65	20.00	
LEAD	26.3	29.4	28.1	5.57	20.00	
NICKEL	8.86	9.41	8.96	3.23	20.00	
ZINC	50.9	55.0	53.4	3.89	20.00	

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-030-061516-A	FTBL- IS-030-061516-B	FTBL- IS-030-061516-C			
ANTIMONY	0.493	1.38	0.356	74.82	20.00	No Qualifiers Applied
ARSENIC	5.00	5.25	5.28	2.97	20.00	
COPPER	22.5	23.3	22.3	2.33	20.00	
LEAD	103	211	73.8	55.91	20.00	
NICKEL	9.15	9.06	9.54	2.76	20.00	
ZINC	52.9	54.9	54.9	2.13	20.00	
BERYLLIUM	0.924	0.873	1.42	28.18	20.00	J(all detects)

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-030-061516-A	FTBL- IS-030-061516-B	FTBL- IS-030-061516-C			
1,3,5-TRINITROBENZENE	0.081 U	0.055	0.030	58.82	20.00*	No Qualifiers Applied

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-030-061516-A	FTBL- IS-030-061516-B	FTBL- IS-030-061516-C			
2,6-DINITROTOLUENE	0.021 U	0.019	0.021 U	NC	20.00	No Qualifiers Applied

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/6/2016 3:14:04 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606648

Laboratory: ALS_K

EDD Filename: K1606648_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6850

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-029-061516	PERCHLORATE	J	2.5	5.0	LOQ	ng/g	J (all detects)

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-030-061516-B	2,6-DINITROTOLUENE	BJN	0.019	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-030-061516-B (1110)	1,3,5-TRINITROBENZENE	JN	0.055	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-030-061516-C (1215)	1,3,5-TRINITROBENZENE	JN	0.030	0.081	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB061516	NICKEL	J	0.07	0.20	LOQ	ug/L	J (all detects)

LDC #: 36919A4a
SDG #: K1606648
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/25/16
Page: 1 of 1
Reviewer: JD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = Sb = MSD out; PS in = NA PB = MSD out; SEP in = NA
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SEP = (1)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-030-061516-A	K1606648-001	Soil	06/15/16
2	FTBL-IS-030-061516-B	K1606648-002	Soil	06/15/16
3	FTBL-IS-030-061516-C	K1606648-003	Soil	06/15/16
4	FTBL-IS-030-061516-A(1105)	K1606648-004	Soil	06/15/16
5	FTBL-IS-030-061516-B(1110)	K1606648-005	Soil	06/15/16
6	FTBL-IS-030-061516-C(1215)	K1606648-006	Soil	06/15/16
7	FTBL-IS-028-061516	K1606648-007	Soil	06/15/16
8	FTBL-IS-029-061516	K1606648-008	Soil	06/15/16
9	EB061516	K1606648-009	Water	06/15/16
10	FTBL-IS-030-061516-AMS	K1606648-001MS	Soil	06/15/16
11	FTBL-IS-030-061516-AMSD	K1606648-001MSD	Soil	06/15/16
12				
13				

Notes:

LDC #: 3099A4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: 30

2nd reviewer: Sm

All circled elements are applicable to each sample.

[illegible]

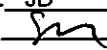
Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1-4 (5X Dil)

					Sample Identification								
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/l)	Maximum ICB/CCB* (ug/l)	Blank Action Limit	No Qual.								
Be			0.011	0.0275									

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 5-8 (5X Dil)

					Sample Identification								
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/l)	Maximum ICB/CCB* (ug/l)	Blank Action Limit	No Qual.								
Be			0.020	0.05									

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All Waters

					Sample Identification								
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/l)	Maximum ICB/CCB* (ug/l)	Blank Action Limit	No Qual.								
Sb			0.015	0.075									
Pb			0.007	0.035									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36919A40
SDG #: K1606648
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/5/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A, A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	ND	EB = 9
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	W	TP = 1+2+3, 4+5+6 (< 100% LOD) - No Am
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-030-061516-A	K1606648-001	Soil	06/15/16
2	FTBL-IS-030-061516-B	K1606648-002	Soil	06/15/16
3	FTBL-IS-030-061516-C	K1606648-003	Soil	06/15/16
4	FTBL-IS-030-061516-A(1105)	K1606648-004	Soil	06/15/16
5	FTBL-IS-030-061516-B(1110)	K1606648-005	Soil	06/15/16
6	FTBL-IS-030-061516-C(1215)	K1606648-006	Soil	06/15/16
7	FTBL-IS-028-061516	K1606648-007	Soil	06/15/16
8	FTBL-IS-029-061516	K1606648-008	Soil	06/15/16
9	EB061516	K1606648-009	Water	06/15/16
10	FTBL-IS-030-061516-AMS	K1606648-001MS	Soil	06/15/16
11	FTBL-IS-030-061516-AMSD	K1606648-001MSD	Soil	06/15/16
12	FTBL-IS-030-061516-ADUP	K1606648-001DUP	Soil	06/15/16
13	FTBL-IS-030-061516-ATRP	K1606648-001TRP	Soil	06/15/16
14				
15				
16				
17				

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N /N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y	N	N/A	Did the reported results for detected target compounds agree within 10.0% of the recalculated results?
---	---	-----	--

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
---	---	-----	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

LDC #: 36919A87 **VALIDATION COMPLETENESS WORKSHEET**
SDG #: K1606648 ADR
Laboratory: ALS Environmental

Date: 8/15/16
Page: 7 of 11
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	
IV.	Continuing calibration	A	
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-029-061516	K1606648-008	Soil	06/15/16
2	FTBL-IS-029-061516MS	K1606648-008MS	Soil	06/15/16
3	FTBL-IS-029-061516MSD	K1606648-008MSD	Soil	06/15/16
4				
5				
6				
7				
8				
9				

Notes:

Quality Control Outlier Reports

K1606708

Method Blank Outlier Report

Lab Reporting Batch ID: K1606708

Laboratory: ALS_K

EDD Filename: K1606708_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607967-01	7/26/2016 7:03:00 PM	LEAD	0.02 mg/Kg	FTBL-IS-031-061616 FTBL-IS-036-061616 FTBL-IS-037-061616 FTBL-IS-045-061616

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607568-01	7/29/2016 7:18:00 AM	LEAD	0.008 ug/L	FB061616

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FB061616(Initial/TOT)	LEAD	0.040 ug/L	0.040U ug/L

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604920-3	6/29/2016 9:11:00 AM	Pentaerythritol Tetranitrate (PETN)	1.5 ug/L	FB061616

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/2/2016 9:01:36 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606708

Laboratory: ALS_K

EDD Filename: K1606708_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-045-061616MS (Dry) FTBL-IS-045-061616MSD (Dry) (FTBL-IS-045-061616)	ANTIMONY	41	48	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 102%

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-045-061616MS (FTBL-IS-045-061616)	3,5-Dinitroaniline HMX	79 71	- -	86.00-118.00 74.00-124.00	- -	3,5-Dinitroaniline HMX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/2/2016 10:13:59 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606708

Laboratory: ALS_K

EDD Filename: K1606708_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605327-12	1,3,5-TRINITROBENZENE	70	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J(all detects) UJ(all non-detects)
KWG1605327-7	2,4,6-TRINITROTOLUENE	65	-	71.00-120.00	-	2,4,6-TRINITROTOLUENE	
(FTBL-IS-031-061616	2,6-DINITROTOLUENE	71	-	79.00-117.00	-	2,6-DINITROTOLUENE	
FTBL-IS-036-061616	3,5-Dinitroaniline	62	-	86.00-118.00	-	3,5-Dinitroaniline	
FTBL-IS-037-061616	4-Amino-2,6-Dinitrotoluene	59	-	64.00-127.00	-	4-Amino-2,6-Dinitrotoluene	
FTBL-IS-045-061616)	HMX	64	-	74.00-124.00	-	HMX	
	NITROGLYCERIN	62	-	73.00-124.00	-	NITROGLYCERIN	
	Tetryl	44	-	68.00-135.00	-	Tetryl	

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604920-1	1,3,5-TRINITROBENZENE	-	68	73.00-125.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
KWG1604920-2	1,3-DINITROBENZENE	76	66	78.00-120.00	-	1,3-DINITROBENZENE	
(FB061616)	2,4,6-TRINITROTOLUENE	-	64	71.00-123.00	-	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	-	69	78.00-120.00	-	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	63	58	77.00-127.00	-	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	77	65	79.00-120.00	-	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	68	61	70.00-127.00	-	2-NITROTOLUENE	
	3,5-Dinitroaniline	-	64	71.00-117.00	-	3,5-Dinitroaniline	
	3-NITROTOLUENE	69	60	73.00-125.00	-	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	-	66	76.00-125.00	-	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	67	60	71.00-127.00	-	4-NITROTOLUENE	
	HMX	64	54	65.00-135.00	-	HMX	
	NITROGLYCERIN	-	69	74.00-127.00	-	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	-	72	73.00-127.00	-	Pentaerythritol Tetranitrate (PETN)	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/2/2016 9:01:40 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606708

Laboratory: ALS_K

EDD Filename: K1606708_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Water

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FB061616	NICKEL	J	0.07	0.20	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/2/2016 9:01:42 AM

ADR version 1.9.0.325

Page 1 of 1

Quality Control Outlier Reports

K1606753

Method Blank Outlier Report

Lab Reporting Batch ID: K1606753

Laboratory: ALS_K

EDD Filename: K1606753_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608042-01	7/27/2016 12:27:00 AM	ZINC	0.3 mg/Kg	FTBL-IS-089-061716 FTBL-IS-089-061716RE FTBL-IS-101-061716 FTBL-IS-101-061716RE FTBL-IS-102-061716 FTBL-IS-102-061716RE FTBL-IS-103-061716 FTBL-IS-103-061716RE

Method: 6020A
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607568-01	7/29/2016 7:18:00 AM	LEAD	0.008 ug/L	EB061716 FTBL-SP-05-061716

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB061716(Initial/TOT)	LEAD	0.019 ug/L	0.019U ug/L

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605327-3	8/4/2016 6:13:00 PM	1,3-DINITROBENZENE	0.023 mg/Kg	FTBL-IS-089-061716 FTBL-IS-101-061716 FTBL-IS-102-061716 FTBL-IS-103-061716

Method: 8330B
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1604920-3	6/29/2016 9:11:00 AM	Pentaerythritol Tetranitrate (PETN)	1.5 ug/L	EB061716

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:04:31 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606753

Laboratory: ALS_K

EDD Filename: K1606753_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-102-061716MS (Dry) FTBL-IS-102-061716MSD (Dry) (FTBL-IS-102-061716)	ANTIMONY	31	28	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 104%

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-102-061716MS FTBL-IS-102-061716MSD (FTBL-IS-102-061716)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX RDX	77 - 69 66 -	75 74 69 62 64	80.00-116.00 79.00-117.00 86.00-118.00 74.00-124.00 67.00-129.00	- - - - -	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX RDX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:54:36 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606753

Laboratory: ALS_K

EDD Filename: K1606753_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605327-4	2,6-DINITROTOLUENE	77	-	79.00-117.00	-	2,6-DINITROTOLUENE	J(all detects) UJ(all non-detects)
KWG1605327-7	3,5-Dinitroaniline	67	-	86.00-118.00	-	3,5-Dinitroaniline	
(FTBL-IS-089-061716	HMX	71	-	74.00-124.00	-	HMX	
FTBL-IS-101-061716	Tetryl	47	-	68.00-135.00	-	Tetryl	
FTBL-IS-102-061716							
FTBL-IS-103-061716)							

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1604920-1	1,3,5-TRINITROBENZENE	-	68	73.00-125.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
KWG1604920-2	1,3-DINITROBENZENE	76	66	78.00-120.00	-	1,3-DINITROBENZENE	
(EB061716)	2,4,6-TRINITROTOLUENE	-	64	71.00-123.00	-	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	-	69	78.00-120.00	-	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	63	58	77.00-127.00	-	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	77	65	79.00-120.00	-	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	68	61	70.00-127.00	-	2-NITROTOLUENE	
	3,5-Dinitroaniline	-	64	71.00-117.00	-	3,5-Dinitroaniline	
	3-NITROTOLUENE	69	60	73.00-125.00	-	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	-	66	76.00-125.00	-	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	67	60	71.00-127.00	-	4-NITROTOLUENE	
	HMX	64	54	65.00-135.00	-	HMX	
	NITROGLYCERIN	-	69	74.00-127.00	-	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	-	72	73.00-127.00	-	Pentaerythritol Tetranitrate (PETN)	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:04:35 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606753

Laboratory: ALS_K

EDD Filename: K1606753_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-101-061716	2,6-DINITROTOLUENE	JN	0.030	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-102-061716	2-NITROTOLUENE	JN	0.010	0.081	LOQ	mg/Kg	J (all detects)

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB061716	LEAD	J	0.019	0.020	LOQ	ug/L	J (all detects)
	NICKEL	J	0.05	0.20	LOQ	ug/L	
	ZINC	J	0.3	0.5	LOQ	ug/L	
FTBL-SP-05-061716	BERYLLIUM	J	0.011	0.020	LOQ	ug/L	J (all detects)

LDC #: 36919C4a
 SDG #: K1606753
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/22/16
 Page: 1 of 1
 Reviewer: JD
 2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D = Sh out; PS M = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SEP = C)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	SW	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER: F appended = Dissolved

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-102-061716	K1606753-001	Soil	06/17/16
2	FTBL-IS-101-061716	K1606753-002	Soil	06/17/16
3	FTBL-IS-089-061716	K1606753-003	Soil	06/17/16
4	FTBL-IS-103-061716	K1606753-004	Soil	06/17/16
5	EB061716	K1606753-005	Water	06/17/16
6	FTBL-SP-05-061716	K1606753-006	Water	06/17/16
7	FTBL-IS-102-061716MS	K1606753-001MS	Soil	06/17/16
8	FTBL-IS-102-061716MSD	K1606753-001MSD	Soil	06/17/16
9	#0 F			
10				
11				
12				
13				

Notes:

All circled elements are applicable to each sample.

[illegible]

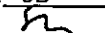
Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All Soils (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Be			0.011	0.0275										

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	5									
Sb			0.015	0.075										
Pb			0.007	0.035	0.019									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET

Sample Result Verification

METHOD: Metals (EPA SW 846 Method 6010/6020/7000)

[illegible]

Comments: _____

LDC #: 36919C40
 SDG #: K1606753
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/5/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A, A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	ND	EB = 5
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SN	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-102-061716	K1606753-001	Soil	06/17/16
2	FTBL-IS-101-061716	K1606753-002	Soil	06/17/16
3	FTBL-IS-089-061716	K1606753-003	Soil	06/17/16
4	FTBL-IS-103-061716	K1606753-004	Soil	06/17/16
5	EB061716	K1606753-005	Water	06/17/16
6	FTBL-SP-05-061716	K1606753-006	Water	06/17/16
7	FTBL-IS-102-061716MS	K1606753-001MS	Soil	06/17/16
8	FTBL-IS-102-061716MSD	K1606753-001MSD	Soil	06/17/16
9	FTBL-IS-102-061716DUP	K1606753-001DUP	Soil	06/17/16
10	FTBL-IS-102-061716TRP	K1606753-001TRP	Soil	06/17/16
11				
12				
13				

Notes:

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

~~Level IV/D Only~~

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y	N	N/A	Did the reported results for detected target compounds agree within 10.0% of the recalculated results?
---	---	-----	--

Y (N) N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
-----------	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

ADR

2nd Reviewer: SM

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	
IV.	Continuing calibration	A	
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-102-061716	K1606753-001	Soil	06/17/16
2				
3				
4				
5				
6				
7				
8				
9				

Notes:

Quality Control Outlier Reports

K1606832

Method Blank Outlier Report

Lab Reporting Batch ID: K1606832

Laboratory: ALS_K

EDD Filename: K1606832_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608102-01	8/3/2016 11:51:00 PM	BERYLLIUM	0.023 mg/Kg	FTBL-IS-042-062016 FTBL-IS-043-062016 FTBL-IS-044-062016 FTBL-IS-053-062016 FTBL-IS-060-062016

Method: 6020A Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB 062016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB 062016(Initial/TOT)	LEAD	0.030 ug/L	0.030U ug/L

Method: 8330B Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605374-5	7/20/2016 7:29:00 AM	1,3-DINITROBENZENE	0.032 mg/Kg	FTBL-IS-042-062016 FTBL-IS-043-062016 FTBL-IS-044-062016 FTBL-IS-053-062016 FTBL-IS-060-062016

Method: 8330B Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605195-3	7/22/2016 6:06:00 PM	2,6-DINITROTOLUENE	0.11 ug/L	EB 062016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB 062016(Initial/TOT)	2,6-DINITROTOLUENE	0.093 ug/L	0.093U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:07:51 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606832

Laboratory: ALS_K

EDD Filename: K1606832_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-042-062016MS (Dry) FTBL-IS-042-062016MSD (Dry) (FTBL-IS-042-062016)	ANTIMONY	36	40	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 101%

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-042-062016MSD (FTBL-IS-042-062016)	3-NITROTOLUENE Pentaerythritol Tetranitrate (PETN)	- -	- -	67.00-129.00 72.00-128.00	21 (20.00) 23 (20.00)	3-NITROTOLUENE Pentaerythritol Tetranitrate (PETN)	J(all detects)
FTBL-IS-042-062016MSD (FTBL-IS-042-062016)	3,5-Dinitroaniline	-	84	86.00-118.00	-	3,5-Dinitroaniline	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 4:06:29 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1606832

Laboratory: ALS_K

EDD Filename: K1606832_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605374-6 (FTBL-IS-042-062016 FTBL-IS-043-062016 FTBL-IS-044-062016 FTBL-IS-053-062016 FTBL-IS-060-062016)	3,5-Dinitroaniline Tetryl	73 52	- -	86.00-118.00 68.00-135.00	- -	3,5-Dinitroaniline Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605195-1 KWG1605195-2 (EB 062016)	2-NITROTOLUENE 3-NITROTOLUENE	68 69	69 71	70.00-127.00 73.00-125.00	- -	2-NITROTOLUENE 3-NITROTOLUENE	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:07:55 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1606832

Laboratory: ALS_K

EDD Filename: K1606832_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6850

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-044-062016	PERCHLORATE	J	2.6	5.0	LOQ	ng/g	J (all detects)

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-042-062016	2,6-DINITROTOLUENE	JN	0.019	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-043-062016	HMX	JN	0.017	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-053-062016	HMX	JN	0.017	0.041	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB 062016	ANTIMONY	J	0.017	0.050	LOQ	ug/L	J (all detects)
	COPPER	J	0.09	0.10	LOQ	ug/L	
	NICKEL	J	0.04	0.20	LOQ	ug/L	

Method: 8330B

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB 062016	2,6-DINITROTOLUENE	BJN	0.093	0.20	LOQ	ug/L	J (all detects)

LDC #: 36919D4a
 SDG #: K1606832
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/21/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	6/20/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration		
IV.	ICP Interference Check Sample (ICS) Analysis		
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS(D) = SB out ; PS in = NO
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A SW ^{SP}	SEE = (1) (2)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-042-062016	K1606832-001	Soil	06/20/16
2	FTBL-IS-060-062016	K1606832-002	Soil	06/20/16
3	FTBL-IS-043-062016	K1606832-003	Soil	06/20/16
4	FTBL-IS-053-062016	K1606832-004	Soil	06/20/16
5	FTBL-IS-044-062016	K1606832-005	Soil	06/20/16
6	EB062016	K1606832-006	Water	06/20/16
7	FTBL-IS-042-062016MS	K1606832-001MS	Soil	06/20/16
8	FTBL-IS-042-062016MSD	K1606832-001MSD	Soil	06/20/16
9				
10				
11				
12				
13				

Notes:

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: _____

Sample Concentration units, unless otherwise noted: _____ ug/L

Associated Samples: _____ All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	6									
Sb			0.020	0.1	0.017									
Be			0.008	0.04										
Pb			0.008	0.04	0.030									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36919D40
SDG #: K1606832
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET **ADR**

Date: 8/2/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	W	EB=6
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-042-062016	K1606832-001	Soil	06/20/16
2	FTBL-IS-060-062016	K1606832-002	Soil	06/20/16
3	FTBL-IS-043-062016	K1606832-003	Soil	06/20/16
4	FTBL-IS-053-062016	K1606832-004	Soil	06/20/16
5	FTBL-IS-044-062016	K1606832-005	Soil	06/20/16
6	EB062016	K1606832-006	Water	06/20/16
7	FTBL-IS-042-062016MS	K1606832-001MS	Soil	06/20/16
8	FTBL-IS-042-062016MSD	K1606832-001MSD	Soil	06/20/16
9	FTBL-IS-042-062016DUP	K1606832-001DUP	Soil	06/20/16
10	FTBL-IS-042-062016TRP	K1606832-001TRP	Soil	06/20/16
11				
12				
13				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36919040VALIDATION FINDINGS WORKSHEET
Field BlanksPage: 1 of 1
Reviewer: 9
2nd Reviewer: SM

METHOD: GC

☒ Y N/A Field blanks were identified in this SDG.☒ Y N/A Were target compounds detected in the field blanks?Blank units: ug/L Associated sample units: mg/kgSampling date: 6/20/16

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Associated Samples: all soils

Compound	Blank ID	Sample Identification							
	<u>6</u>	<u>5X</u>							
<u>2,6-Dinitrotoluene</u>	<u>0.093</u>	<u>0.465</u>							
<u>3-Nitrotoluene</u>	<u>0.19</u>	<u>0.95</u>							

Blank units: _____ Associated sample units: _____

Sampling date: _____

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Associated Samples: _____

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 36919040

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1Reviewer: [Signature]2nd Reviewer: [Signature]METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y N N/A

Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings below.

#	Compound Name	Sample ID	%RPD Between Two Columns/Detectors Limit ($\leq 40\%$)	Qualifications
	2,6 K, M	6	no confirmation	NT dots / N
	K	1		
	A	3, 4		

Comments: See sample calculation verification worksheet for recalculations

ADR

2nd Reviewer: Sm

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

Notes:						

Quality Control Outlier Reports

K1607019

Method Blank Outlier Report

Lab Reporting Batch ID: K1607019

Laboratory: ALS_K

EDD Filename: K1607019_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608107-01	8/5/2016 4:17:00 PM	LEAD	0.158 mg/Kg	FTBL-IS-069-062216 FTBL-IS-080-062216 FTBL-IS-081-062216 FTBL-IS-088-062216 FTBL-IS-097-062216-A FTBL-IS-097-062216-B FTBL-IS-097-062216-C FTBL-IS-098-062216 FTBL-IS-099-062216

Method: 6020A
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB062216

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB062216(Initial/TOT)	LEAD	0.029 ug/L	0.029U ug/L

Method: 8330B
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605195-3	7/22/2016 6:06:00 PM	2,6-DINITROTOLUENE	0.11 ug/L	EB062216

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB062216(Initial/TOT)	2,6-DINITROTOLUENE	0.098 ug/L	0.098U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:08:14 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607019

Laboratory: ALS_K

EDD Filename: K1607019_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-080-062216MS (Dry) FTBL-IS-080-062216MSD (Dry) (FTBL-IS-080-062216)	ANTIMONY	33	32	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 104%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 4:17:36 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607019

Laboratory: ALS_K

EDD Filename: K1607019_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605497-5 (FTBL-IS-069-062216 FTBL-IS-080-062216 FTBL-IS-081-062216 FTBL-IS-088-062216 FTBL-IS-097-062216-A FTBL-IS-097-062216-B FTBL-IS-097-062216-C FTBL-IS-098-062216 FTBL-IS-099-062216)	1,3,5-TRINITROBENZENE Tetryl	5 0	- -	80.00-116.00 68.00-135.00	- -	1,3,5-TRINITROBENZENE Tetryl	J(all detects) R(all non-detects)
KWG1605497-5 (FTBL-IS-069-062216 FTBL-IS-080-062216 FTBL-IS-081-062216 FTBL-IS-088-062216 FTBL-IS-097-062216-A FTBL-IS-097-062216-B FTBL-IS-097-062216-C FTBL-IS-098-062216 FTBL-IS-099-062216)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	21 14 27 28 29 34 26 33 28 33 30 33 21 30 30	- - - - - - - - - - - - - - -	73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00	- - - - - - - - - - - - - - -	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605195-1 KWG1605195-2 (EB062216)	2-NITROTOLUENE 3-NITROTOLUENE	68 69	69 71	70.00-127.00 73.00-125.00	- -	2-NITROTOLUENE 3-NITROTOLUENE	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:08:18 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607019

Laboratory: ALS_K

EDD Filename: K1607019_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-069-062216	2-NITROTOLUENE	JN	0.017	0.082	LOQ	mg/Kg	J (all detects)

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB062216	NICKEL	J	0.17	0.20	LOQ	ug/L	J (all detects)

Method: 8330B
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB062216	2,6-DINITROTOLUENE	BJN	0.098	0.20	LOQ	ug/L	J (all detects)
	3-NITROTOLUENE	JN	0.079	0.10	LOQ	ug/L	
	4-NITROTOLUENE	JN	0.088	0.10	LOQ	ug/L	
	NITROGLYCERIN	JN	0.80	1.0	LOQ	ug/L	

Field Triplicate RSD Report

Lab Reporting Batch ID: K1607019

Laboratory: ALS_K

EDD Filename: K1607019_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-097-062216-A	FTBL- IS-097-062216-B	FTBL- IS-097-062216-C			
ANTIMONY	0.147	0.162	0.145	6.14	20.00	No Qualifiers Applied
ARSENIC	7.73	7.96	8.10	2.36	20.00	
BERYLLIUM	1.30	1.30	1.35	2.19	20.00	
COPPER	21.3	20.3	20.5	2.56	20.00	
LEAD	28.5	28.2	27.1	2.64	20.00	
NICKEL	11.5	11.0	10.9	2.89	20.00	
ZINC	95.5	96.5	95.3	0.67	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:08:23 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36919E4a
 SDG #: K1607019
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 6/22/16
 Page: 1 of 1
 Reviewer: JD
 2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	-/N	6/22/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = SB out ; PS in = N2
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SEP = (1)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-080-062216	K1607019-001	Soil	06/22/16
2	FTBL-IS-069-062216	K1607019-002	Soil	06/22/16
3	FTBL-IS-097-062216-A	K1607019-003	Soil	06/22/16
4	FTBL-IS-097-062216-B	K1607019-004	Soil	06/22/16
5	FTBL-IS-097-062216-C	K1607019-005	Soil	06/22/16
6	FTBL-IS-081-062216	K1607019-006	Soil	06/22/16
7	FTBL-IS-088-062216	K1607019-007	Soil	06/22/16
8	FTBL-IS-098-062216	K1607019-008	Soil	06/22/16
9	FTBL-IS-099-062216	K1607019-009	Soil	06/22/16
10	EB062216	K1607019-010	Water	06/22/16
11	FTBL-IS-080-062216MS	K1607019-001MS	Soil	06/22/16
12	FTBL-IS-080-062216MSD	K1607019-001MSD	Soil	06/22/16
13				
14				

Notes:

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1 (5X)

					Sample/Identification									
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	1									
Sb			0.062	0.155	0.147									

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2-9 (5X)

					Sample/Identification									
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	3	4	5	6	7	8	9			
Sb			0.096	0.24	0.147	0.162	0.145	0.185	0.199	0.220	0.131			

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample/Identification									
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	10									
Sb			0.020	0.1										
Be			0.009	0.045										
Pb			0.008	0.04	0.029									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36919E40 **VALIDATION COMPLETENESS WORKSHEET**
SDG #: K1607019 ADR
Laboratory: ALS Environmental

Date: 8/25/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	AA	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	WB	EB = ID (A1(10))
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	ND	TP = 3+4+5
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-080-062216	K1607019-001	Soil	06/22/16
2	FTBL-IS-069-062216	K1607019-002	Soil	06/22/16
3	FTBL-IS-097-062216-A	K1607019-003	Soil	06/22/16
4	FTBL-IS-097-062216-B	K1607019-004	Soil	06/22/16
5	FTBL-IS-097-062216-C	K1607019-005	Soil	06/22/16
6	FTBL-IS-081-062216	K1607019-006	Soil	06/22/16
7	FTBL-IS-088-062216	K1607019-007	Soil	06/22/16
8	FTBL-IS-098-062216	K1607019-008	Soil	06/22/16
9	FTBL-IS-099-062216	K1607019-009	Soil	06/22/16
10	EB062216	K1607019-010	Water	06/22/16
11	FTBL-IS-080-062216MS	K1607019-001MS	Soil	06/22/16
12	FTBL-IS-080-062216MSD	K1607019-001MSD	Soil	06/22/16
13	FTBL-IS-080-062216DUP	K1607019-001DUP	Soil	06/22/16
14	FTBL-IS-080-062216TRP	K1607019-001TRP	Soil	06/22/16
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141 (Cont)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenzo(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. <i>Nitroglycerin</i>		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36919640

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: 9

2nd Reviewer:

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level ~~W/D~~ Only

Y N ~~N/A~~ Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y/N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1607034

Method Blank Outlier Report

Lab Reporting Batch ID: K1607034

Laboratory: ALS_K

EDD Filename: K1607034_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608123-01	8/5/2016 5:45:00 PM	COPPER LEAD NICKEL ZINC	0.029 mg/Kg 0.015 mg/Kg 0.04 mg/Kg 0.34 mg/Kg	FTBL-IS-039-062316 FTBL-IS-040-062316 FTBL-IS-041-062316 FTBL-IS-047-062316 FTBL-IS-065-062316 FTBL-IS-066-062316 FTBL-IS-067-062316 FTBL-IS-078-062316 FTBL-IS-087-062316 FTBL-IS-104-062316

Method: 6020A
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB062316

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB062316(Initial/TOT)	LEAD	0.010 ug/L	0.010U ug/L

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605607-4	7/30/2016 7:36:00 PM	NITROGLYCERIN	0.11 mg/Kg	FTBL-IS-039-062316 FTBL-IS-040-062316 FTBL-IS-041-062316 FTBL-IS-047-062316 FTBL-IS-065-062316 FTBL-IS-066-062316 FTBL-IS-067-062316 FTBL-IS-078-062316 FTBL-IS-087-062316 FTBL-IS-104-062316
KWG1605607-8	7/30/2016 5:47:00 PM	Pentaerythritol Tetranitrate (PETN)	0.11 mg/Kg	FTBL-IS-039-062316 FTBL-IS-040-062316 FTBL-IS-041-062316 FTBL-IS-047-062316 FTBL-IS-065-062316 FTBL-IS-066-062316 FTBL-IS-067-062316 FTBL-IS-078-062316 FTBL-IS-087-062316 FTBL-IS-104-062316

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:08:41 PM

ADR version 1.9.0.325

Page 1 of 2

Method Blank Outlier Report

Lab Reporting Batch ID: K1607034

Laboratory: ALS_K

EDD Filename: K1607034_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605607-9	7/30/2016 8:12:00 PM	1,3-DINITROBENZENE NITROGLYCERIN	0.016 mg/Kg 0.061 mg/Kg	FTBL-IS-039-062316 FTBL-IS-040-062316 FTBL-IS-041-062316 FTBL-IS-047-062316 FTBL-IS-065-062316 FTBL-IS-066-062316 FTBL-IS-067-062316 FTBL-IS-078-062316 FTBL-IS-087-062316 FTBL-IS-104-062316

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-078-062316(Initial)	NITROGLYCERIN	0.063 mg/Kg	0.063U mg/Kg

Method: 8330B
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605195-3	7/22/2016 6:06:00 PM	2,6-DINITROTOLUENE	0.11 ug/L	EB062316

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB062316(Initial/TOT)	2,6-DINITROTOLUENE	0.15 ug/L	0.15U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:08:41 PM

ADR version 1.9.0.325

Page 2 of 2

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607034

Laboratory: ALS_K

EDD Filename: K1607034_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-104-062316MS (Dry) FTBL-IS-104-062316MSD (Dry) (FTBL-IS-104-062316)	ANTIMONY	44	43	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 103%

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-104-062316MS FTBL-IS-104-062316MSD (FTBL-IS-104-062316)	2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX	77 82 -	73 77 71	79.00-117.00 86.00-118.00 74.00-124.00	- - -	2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 4:50:07 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607034

Laboratory: ALS_K

EDD Filename: K1607034_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605607-3 (FTBL-IS-039-062316 FTBL-IS-040-062316 FTBL-IS-041-062316 FTBL-IS-047-062316 FTBL-IS-065-062316 FTBL-IS-066-062316 FTBL-IS-067-062316 FTBL-IS-078-062316 FTBL-IS-087-062316 FTBL-IS-104-062316)	3,5-Dinitroaniline Tetryl	76 55	- -	86.00-118.00 68.00-135.00	- -	3,5-Dinitroaniline Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605195-1 KWG1605195-2 (EB062316)	2-NITROTOLUENE 3-NITROTOLUENE	68 69	69 71	70.00-127.00 73.00-125.00	- -	2-NITROTOLUENE 3-NITROTOLUENE	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:08:45 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607034

Laboratory: ALS_K

EDD Filename: K1607034_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-078-062316	NITROGLYCERIN	JN	0.063	0.21	LOQ	mg/Kg	J (all detects)

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB062316	COPPER	J	0.08	0.10	LOQ	ug/L	J (all detects)
	LEAD	J	0.010	0.020	LOQ	ug/L	
	NICKEL	J	0.09	0.20	LOQ	ug/L	

Method: 8330B
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB062316	2,6-DINITROTOLUENE	BJN	0.15	0.20	LOQ	ug/L	J (all detects)
	3-NITROTOLUENE	JN	0.063	0.10	LOQ	ug/L	

LDC #: 36919F4a
SDG #: K1607034
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 6/29/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	6/23/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = SB out; B2u = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (1)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-104-062316	K1607034-001	Soil	06/12/16
2	FTBL-IS-087-062316	K1607034-002	Soil	06/12/16
3	FTBL-IS-066-062316	K1607034-003	Soil	06/12/16
4	FTBL-IS-065-062316	K1607034-004	Soil	06/12/16
5	FTBL-IS-078-062316	K1607034-005	Soil	06/12/16
6	FTBL-IS-067-062316	K1607034-006	Soil	06/12/16
7	FTBL-IS-041-062316	K1607034-007	Soil	06/12/16
8	FTBL-IS-040-062316	K1607034-008	Soil	06/12/16
9	FTBL-IS-039-062316	K1607034-009	Soil	06/12/16
10	FTBL-IS-047-062316	K1607034-010	Soil	06/12/16
11	EB062316	K1607034-011	Water	06/12/16
12	FTBL-IS-104-062316MS	K1607034-001MS	Soil	06/12/16
13	FTBL-IS-104-062316MSD	K1607034-001MSD	Soil	06/12/16
14				
15				

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: h

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1-3 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	1	2	3							
Sb			0.096	0.24	0.146	0.203	0.136							

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 4-10 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	4	5	6	7	8	9				
Sb			0.093	0.2325	0.121	0.129	0.181	0.194	0.152	0.196				

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	11									
Sb			0.020	0.1										
Be			0.008	0.04										
Pb			0.008	0.04	0.010									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36919F40
SDG #: K1607034
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/5/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	SW	EB=1 / (No data was qualified - ND or > 5)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SW N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-104-062316	K1607034-001	Soil	06/12/16
2	FTBL-IS-087-062316	K1607034-002	Soil	06/12/16
3	FTBL-IS-066-062316	K1607034-003	Soil	06/12/16
4	FTBL-IS-065-062316	K1607034-004	Soil	06/12/16
5	FTBL-IS-078-062316	K1607034-005	Soil	06/12/16
6	FTBL-IS-067-062316	K1607034-006	Soil	06/12/16
7	FTBL-IS-041-062316	K1607034-007	Soil	06/12/16
8	FTBL-IS-040-062316	K1607034-008	Soil	06/12/16
9	FTBL-IS-039-062316	K1607034-009	Soil	06/12/16
10	FTBL-IS-047-062316	K1607034-010	Soil	06/12/16
11	EB062316	K1607034-011	Water	06/12/16
12	FTBL-IS-104-062316MS	K1607034-001MS	Soil	06/12/16
13	FTBL-IS-104-062316MSD	K1607034-001MSD	Soil	06/12/16
14	FTBL-IS-104-062316DUP	K1607034-001DUP	Soil	06/12/16
15	FTBL-IS-104-062316TRP	K1607034-001TRP	Soil	06/12/16
16				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer:

2nd Reviewer: [Signature]

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N ~~N/A~~

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N ~~N/A~~

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y(N N/A

Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1607146

Method Blank Outlier Report

Lab Reporting Batch ID: K1607146
EDD Filename: K1607146_SEDD2A

Laboratory: ALS_K
eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB062716

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB062716(Initial/TOT)	LEAD	0.016 ug/L	0.016U ug/L

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605698-6	7/25/2016 5:17:00 PM	3-NITROTOLUENE	0.038 mg/Kg	FTBL-IS-121-062716-A FTBL-IS-121-062716-B FTBL-IS-121-062716-C FTBL-IS-129-062716 FTBL-IS-137-062716 FTBL-IS-140-062716-A FTBL-IS-140-062716-B FTBL-IS-140-062716-C
KWG1605698-8	7/25/2016 10:07:00 PM	1,3-DINITROBENZENE 2-NITROTOLUENE NITROBENZENE	0.056 mg/Kg 0.012 mg/Kg 0.010 mg/Kg	FTBL-IS-121-062716-A FTBL-IS-121-062716-B FTBL-IS-121-062716-C FTBL-IS-129-062716 FTBL-IS-137-062716 FTBL-IS-140-062716-A FTBL-IS-140-062716-B FTBL-IS-140-062716-C

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-121-062716-A(Initial)	1,3-DINITROBENZENE	0.017 mg/Kg	0.017U mg/Kg
FTBL-IS-121-062716-B(Initial)	2-NITROTOLUENE	0.019 mg/Kg	0.019U mg/Kg
FTBL-IS-129-062716(Initial)	2-NITROTOLUENE	0.016 mg/Kg	0.016U mg/Kg
FTBL-IS-140-062716-B(Initial)	NITROBENZENE	0.019 mg/Kg	0.019U mg/Kg

Method: 8330B
Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605348-3	7/19/2016 2:35:00 PM	2,6-DINITROTOLUENE	0.084 ug/L	EB062716

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:09:13 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607146

Laboratory: ALS_K

EDD Filename: K1607146_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6850

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-137-062716MS FTBL-IS-137-062716MSD (FTBL-IS-137-062716)	PERCHLORATE	136	138	84.00-121.00	-	PERCHLORATE	J (all detects)

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-121-062716-AMS FTBL-IS-121-062716-AMSD (FTBL-IS-121-062716-A)	3,5-Dinitroaniline	83	83	86.00-118.00	-	3,5-Dinitroaniline	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:09:15 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607146

Laboratory: ALS_K

EDD Filename: K1607146_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605698-5 KWG1605698-7 (FTBL-IS-121-062716-A FTBL-IS-121-062716-B FTBL-IS-121-062716-C FTBL-IS-129-062716 FTBL-IS-137-062716 FTBL-IS-140-062716-A FTBL-IS-140-062716-B FTBL-IS-140-062716-C)	3,5-Dinitroaniline NITROGLYCERIN Tetryl	75 68 55	- - -	86.00-118.00 73.00-124.00 68.00-135.00	- - -	3,5-Dinitroaniline NITROGLYCERIN Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B
Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605348-1 (EB062716)	2,6-DINITROTOLUENE	75	-	77.00-127.00	-	2,6-DINITROTOLUENE	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:09:17 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1607146

Laboratory: ALS_K

EDD Filename: K1607146_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-140-062716-A	FTBL- IS-140-062716-B	FTBL- IS-140-062716-C			
ANTIMONY	0.163	0.150	0.139	7.97	20.00	No Qualifiers Applied
ARSENIC	5.10	4.96	5.05	1.41	20.00	
BERYLLIUM	2.03	1.95	1.97	2.1	20.00	
COPPER	16.8	16.8	16.5	1.04	20.00	
LEAD	23.5	22.9	24.0	2.35	20.00	
NICKEL	7.68	7.91	7.97	1.95	20.00	
ZINC	68.2	67.5	68.3	0.64	20.00	

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-121-062716-A	FTBL- IS-121-062716-B	FTBL- IS-121-062716-C			
ANTIMONY	0.362	0.312	0.306	9.41	20.00	No Qualifiers Applied
ARSENIC	6.27	5.91	5.84	3.84	20.00	
BERYLLIUM	1.58	1.65	1.56	2.96	20.00	
NICKEL	6.73	6.41	6.25	3.78	20.00	
ZINC	81.5	81.2	76.2	3.74	20.00	
COPPER	35.9	73.9	30.7	50.36	20.00	J(all detects)
LEAD	473	74.1	73.1	111.54	20.00	

Method: 8330E

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-140-062716-A	FTBL- IS-140-062716-B	FTBL- IS-140-062716-C			
1,3,5-TRINITROBENZENE	0.081 U	0.050	0.081 U	NC	20.00	No Qualifiers Applied
NITROBENZENE	0.023 U	0.019	0.021 U	NC	20.00	
NITROGLYCERIN	0.21 U	0.097	0.21 U	NC	20.00	

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-121-062716-A	FTBL- IS-121-062716-B	FTBL- IS-121-062716-C			
1,3-DINITROBENZENE	0.017	0.041 U	0.041 U	NC	20.00	No Qualifiers Applied
2-NITROTOLUENE	0.021 U	0.019	0.021 U	NC	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:09:22 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607146

Laboratory: ALS_K

EDD Filename: K1607146_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-121-062716-A	1,3-DINITROBENZENE	BJN	0.017	0.041	LOQ	mg/Kg	J (all detects)
FTBL-IS-121-062716-B	2-NITROTOLUENE	JN	0.019	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-129-062716	2-NITROTOLUENE	JN	0.016	0.081	LOQ	mg/Kg	J (all detects)
	NITROGLYCERIN	JN	0.099	0.21	LOQ	mg/Kg	
FTBL-IS-137-062716	NITROGLYCERIN	JN	0.11	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-140-062716-B	1,3,5-TRINITROBENZENE	JN	0.050	0.081	LOQ	mg/Kg	J (all detects)
	NITROBENZENE	JN	0.019	0.081	LOQ	mg/Kg	
	NITROGLYCERIN	JN	0.097	0.21	LOQ	mg/Kg	

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB062716	ANTIMONY	J	0.013	0.050	LOQ	ug/L	J (all detects)
	LEAD	J	0.016	0.020	LOQ	ug/L	
	NICKEL	J	0.08	0.20	LOQ	ug/L	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:09:18 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36919G4a
SDG #: K1607146
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/23/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	N	6/27/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-121-062716-A	K1607146-001	Soil	06/27/16
2	FTBL-IS-121-062716-B	K1607146-002	Soil	06/27/16
3	FTBL-IS-121-062716-C	K1607146-003	Soil	06/27/16
4	FTBL-IS-140-062716-A	K1607146-004	Soil	06/27/16
5	FTBL-IS-140-062716-B	K1607146-005	Soil	06/27/16
6	FTBL-IS-140-062716-C	K1607146-006	Soil	06/27/16
7	FTBL-IS-137-062716	K1607146-007	Soil	06/27/16
8	FTBL-IS-129-062716	K1607146-008	Soil	06/27/16
9	EB062716	K1607146-009	Water	06/27/16
10				
11				
12				
13				

Notes:

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: *JD*

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All Soils (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Be			0.011	0.0275										

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	9									
Sb			0.020	0.1	0.013									
Be			0.009	0.045										
Pb			0.008	0.04	0.016									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36919G40
SDG #: K1607146
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/25/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	NA	
IV.	Laboratory Blanks	N	
V.	Field blanks	SW	EB = 9
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	SW	RP = 1+2+3, 4+5+6 < LOB - No Anal
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-121-062716-A	K1607146-001	Soil	06/27/16
2	FTBL-IS-121-062716-B	K1607146-002	Soil	06/27/16
3	FTBL-IS-121-062716-C	K1607146-003	Soil	06/27/16
4	FTBL-IS-140-062716-A	K1607146-004	Soil	06/27/16
5	FTBL-IS-140-062716-B	K1607146-005	Soil	06/27/16
6	FTBL-IS-140-062716-C	K1607146-006	Soil	06/27/16
7	FTBL-IS-137-062716	K1607146-007	Soil	06/27/16
8	FTBL-IS-129-062716	K1607146-008	Soil	06/27/16
9	EB062716	K1607146-009	Water	06/27/16
10	FTBL-IS-121-062716-AMS	K1607146-001MS	Soil	06/27/16
11	FTBL-IS-121-062716-AMSD	K1607146-001MSD	Soil	06/27/16
12	FTBL-IS-121-062716-ADUP	K1607146-001DUP	Soil	06/27/16
13	FTBL-IS-121-062716-ATRP	K1607146-001TRP	Soil	06/27/16
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36919440

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

Page: of

Reviewer: 9

2nd Reviewer:

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

16 N/A Were continuing calibration standards analyzed at the required frequencies?

Y/N N/A Did the continuing calibration standards meet the %D validation criteria of $\leq 20.0\%$?

Level IV Only

Y N (N/A) Were the retention times for all calibrated compounds within their respective acceptance windows?

[illegible]

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N ~~N/A~~ Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors <40%?
---	---	-----	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Laboratory: ALS Environmental

2nd Reviewer: SM

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	
IV.	Continuing calibration	A	
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-137-062716	K1607146-007	Soil	06/27/16
2	FTBL-IS-129-062716	K1607146-008	Soil	06/27/16
3	FTBL-IS-137-062716MS	K1607146-007MS	Soil	06/27/16
4	FTBL-IS-137-062716MSD	K1607146-007MSD	Soil	06/27/16
5				
6				
7				
8				
9				

Quality Control Outlier Reports

K1607266

Method Blank Outlier Report

Lab Reporting Batch ID: K1607266

Laboratory: ALS_K

EDD Filename: K1607266_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608627-01	8/5/2016 6:55:00 PM	COPPER LEAD ZINC	0.027 mg/Kg 0.006 mg/Kg 0.12 mg/Kg	FTBL-IS-124-062916 FTBL-IS-125-062916 FTBL-IS-128-062916 FTBL-IS-130-062916 FTBL-IS-131-062916 FTBL-IS-132-062916 FTBL-IS-138-062916 FTBL-IS-139-062916

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB 062916

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB 062916(Initial/TOT)	LEAD	0.033 ug/L	0.033U ug/L

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605518-3	7/19/2016 6:48:00 PM	3-NITROTOLUENE	0.035 ug/L	EB 062916

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:10:02 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607266

Laboratory: ALS_K

EDD Filename: K1607266_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6850

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-130-062916MS FTBL-IS-130-062916MSD (FTBL-IS-130-062916)	PERCHLORATE	129	134	84.00-121.00	-	PERCHLORATE	J (all detects)

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-132-062916MS FTBL-IS-132-062916MSD (FTBL-IS-132-062916)	2,6-DINITROTOLUENE 3,5-Dinitroaniline	- 78	76 -	79.00-117.00 86.00-118.00	- -	2,6-DINITROTOLUENE 3,5-Dinitroaniline	J(all detects) JJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:10:04 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607266

Laboratory: ALS_K

EDD Filename: K1607266_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605799-4	1,3,5-TRINITROBENZENE	73	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
(FTBL-IS-124-062916	1,3-DINITROBENZENE	70	-	73.00-119.00	-	1,3-DINITROBENZENE	
FTBL-IS-125-062916	2,4,6-TRINITROTOLUENE	68	-	71.00-120.00	-	2,4,6-TRINITROTOLUENE	
FTBL-IS-128-062916	2,6-DINITROTOLUENE	66	-	79.00-117.00	-	2,6-DINITROTOLUENE	
FTBL-IS-130-062916	3,5-Dinitroaniline	59	-	86.00-118.00	-	3,5-Dinitroaniline	
FTBL-IS-131-062916	4-Amino-2,6-Dinitrotoluene	63	-	64.00-127.00	-	4-Amino-2,6-Dinitrotoluene	
FTBL-IS-132-062916	HMX	64	-	74.00-124.00	-	HMX	
FTBL-IS-138-062916	NITROGLYCERIN	64	-	73.00-124.00	-	NITROGLYCERIN	
FTBL-IS-139-062916)	Tetryl	42	-	68.00-135.00	-	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:10:06 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607266

Laboratory: ALS_K

EDD Filename: K1607266_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-124-062916	3-NITROTOLUENE	BJN	0.036	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-128-062916	3-NITROTOLUENE	BJN	0.039	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-139-062916	NITROGLYCERIN	J	0.18	0.21	LOQ	mg/Kg	J (all detects)

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB 062916	NICKEL	J	0.07	0.20	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/1/2016 3:10:07 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36919H4a
 SDG #: K1607266
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/29/16
 Page: 1 of 1
 Reviewer: SD
 2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	6/29/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-132-062916	K1607266-001	Soil	06/29/16
2	FTBL-IS-139-062916	K1607266-002	Soil	06/29/16
3	FTBL-IS-130-062916	K1607266-003	Soil	06/29/16
4	FTBL-IS-131-062916	K1607266-004	Soil	06/29/16
5	FTBL-IS-138-062916	K1607266-005	Soil	06/29/16
6	FTBL-IS-125-062916	K1607266-006	Soil	06/29/16
7	FTBL-IS-128-062916	K1607266-007	Soil	06/29/16
8	FTBL-IS-124-062916	K1607266-008	Soil	06/29/16
9	EB062916	K1607266-009	Water	06/29/16
10				
11				
12				
13				

Notes:

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: *JD*

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	1									
Sb			0.076	0.19	0.111									

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2-8 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	3	5	6	8						
Sb			0.062	0.155	0.104	0.110	0.155	0.116						

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	9									
Sb			0.020	0.1										
Be			0.009	0.045										
Pb			0.008	0.04	0.033									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36919H40
 SDG #: K1607266
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/25/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	ND	EB = 9
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-132-062916	K1607266-001	Soil	06/29/16
2	FTBL-IS-139-062916	K1607266-002	Soil	06/29/16
3	FTBL-IS-130-062916	K1607266-003	Soil	06/29/16
4	FTBL-IS-131-062916	K1607266-004	Soil	06/29/16
5	FTBL-IS-138-062916	K1607266-005	Soil	06/29/16
6	FTBL-IS-125-062916	K1607266-006	Soil	06/29/16
7	FTBL-IS-128-062916	K1607266-007	Soil	06/29/16
8	FTBL-IS-124-062916	K1607266-008	Soil	06/29/16
9	EB062916	K1607266-009	Water	06/29/16
10	FTBL-IS-132-062916MS	K1607266-001MS	Soil	06/29/16
11	FTBL-IS-132-062916MSD	K1607266-001MSD	Soil	06/29/16
12	FTBL-IS-132-062916DUP	K1607266-001DUP	Soil	06/29/16
13	FTBL-IS-132-062916TRP	K1607266-001TRP	Soil	06/29/16
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O.		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36919H40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: 9

2nd Reviewer: h

METHOD: GC ✓HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N ~~N/A~~ Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N (N/A) Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

$\frac{Y(N)}{N/A}$	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1
19	1
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85	1
86	1
87	1
88	1
89	1
90	1
91	1
92	1
93	1
94	1
95	1
96	1
97	1
98	1
99	1
100	1

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	
IV.	Continuing calibration	A	
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-130-062916	K1607266-003	Soil	06/29/16
2	FTBL-IS-131-062916	K1607266-004	Soil	06/29/16
3	FTBL-IS-138-062916	K1607266-005	Soil	06/29/16
4	FTBL-IS-125-062916	K1607266-006	Soil	06/29/16
5	FTBL-IS-128-062916	K1607266-007	Soil	06/29/16
6	FTBL-IS-124-062916	K1607266-008	Soil	06/29/16
7	FTBL-IS-130-062916MS	K1607266-003MS	Soil	06/29/16
8	FTBL-IS-130-062916MSD	K1607266-003MSD	Soil	06/29/16
9				
10				

Notes:

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 2, 2016

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1606708

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-045-061616	K1606708-001	Soil	06/16/16
FTBL-IS-036-061616	K1606708-002	Soil	06/16/16
FTBL-IS-037-061616	K1606708-003	Soil	06/16/16
FTBL-IS-031-061616	K1606708-004	Soil	06/16/16
FB061616	K1606708-005	Water	06/16/16
FTBL-IS-045-061616MS	K1606708-001MS	Soil	06/16/16
FTBL-IS-045-061616MSD	K1606708-001MSD	Soil	06/16/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Arsenic, Beryllium, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead	0.02 mg/Kg	All soil samples in SDG K1606708
ICB/CCB	Beryllium	0.020 ug/L	All soil samples in SDG K1606708
PB (prep blank)	Lead	0.008 ug/L	All water samples in SDG K1606708
ICB/CCB	Lead Antimony	0.007 ug/L 0.015 ug/L	All water samples in SDG K1606708

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
FB061616	Lead	0.040 ug/L	0.040U ug/L

VI. Field Blanks

Sample FB061616 was identified as a field blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
FB061616	06/16/16	Copper Lead Nickel Zinc	0.11 ug/L 0.040 ug/L 0.07 ug/L 0.8 ug/L	All soil samples in SDG K1606708

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. No data were qualified for Antimony percent recoveries (%R) outside QC limits for FTBL-IS-045-061616MS/MSD since the post-digestion spike %R was within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to laboratory blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1606708

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1606708

Sample	Analyte	Modified Final Concentration	A or P
FB061616	Lead	0.040U ug/L	A

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1606708

No Sample Data Qualified in this SDG

LDC #: 36919B4a
 SDG #: K1606708
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET Level IV

Date: 8/21/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	6/16/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	FB = (5)
VII.	Matrix Spike/Matrix Spike Duplicates	SW	MSID = (6.7)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SW SER = (1)
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB = Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-045-061616	K1606708-001	Soil	06/16/16
2	FTBL-IS-036-061616	K1606708-002	Soil	06/16/16
3	FTBL-IS-037-061616	K1606708-003	Soil	06/16/16
4	FTBL-IS-031-061616	K1606708-004	Soil	06/16/16
5	FB061616	K1606708-005	Water	06/16/16
6	FTBL-IS-045-061616MS	K1606708-001MS	Soil	06/16/16
7	FTBL-IS-045-061616MSD	K1606708-001MSD	Soil	06/16/16
8				
9				
10				
11				
12				
13				

Notes: _____

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	/			
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	/			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	/			
Were all initial calibration correlation coefficients ≥ 0.995 ?	/			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	/			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	/			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		/		
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm 2X$ RL ($\pm 2X$ RL for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	/			
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	/			

LDC #: 36919B46

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: SS
2nd Reviewer: SS

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/			
If the %Rs were outside the criteria, was a reanalysis performed?	/			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	/			
Were all percent differences (%Ds) < 10%?	X	/		(no) SS
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		/		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
XIII. Field blanks				
Field blanks were identified in this SDG.	/			
Target analytes were detected in the field blanks.	/			

LDC #: 369K349

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: JD

2nd reviewer:

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All Soils (5X Dil)

					Sample/Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (µg/L)	Maximum ICB/CCB ^a (µg/L)	Blank Action Limit	No Qual.									
Be			0.020	0.05										
Pb	0.02			0.1										

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All Waters

					Sample/Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (µg/L)	Maximum ICB/CCB ^a (µg/L)	Blank Action Limit	5									
Pb		0.008	0.007	0.04	0.040									
Sb			0.015	0.075										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET
Field BlanksPage: 1 of 1
Reviewer: JS
2nd Reviewer: [Signature]

METHOD: Trace Metals (EPA Method 200.7/200.8)

Blank units: ug/L Associated sample units: mg/kg

Sampling date: 06/16/16

Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All Soils

Analyte	Blank ID	Sample Identification										
	5	Action Limit	No Qual.									
Cu	0.11	0.000550										
Pb	0.040	0.000200										
Ni	0.07	0.000350										
Zn	0.8	0.004000										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 3699B4c

VALIDATION FINDINGS WORKSHEET **Initial and Continuing Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: JD
 2nd Reviewer: Q

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
ICV 17:06	ICP/MS (Initial calibration)	Pb	25.58 ug/L	25 ug/L	102%R	102%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV 20:57	ICP/MS (Continuing calibration)	Zn	24.96 ug/L	25 ug/L	100%R	100%R	Y
	CVAA (Continuing calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibration)						

Comments: _____

LDC #: 36919 B4

VALIDATION FINDINGS WORKSHEET **Level IV Recalculation Worksheet**

Page: 1 of 1
 Reviewer: JD
 2nd Reviewer: JD

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation,
 Found = SSR (spiked sample result) - SR (sample result).
 True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
 D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
 SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
ICS AB 17:46	ICP interference check	Ni	49.26 ug/L	50 ug/L	99%R	99%R	Y
LCS 19:08	Laboratory control sample	As	1050 ug/L	1000 ug/L	105%R	105%R	Y
MS 20:52	Matrix spike	Sb	(SSR-SR) 40.1 mg/kg	98.3 mg/kg	41%R	41%R	Y
MSD 21:12	Duplicate	Cu	69.35 mg/kg	68.32 mg/kg	1.5 %RPD	1.1 %RPD	Y*
SDR 20:42	ICP serial dilution	Zn	122.52 ug/L	127.84 ug/L	4.2%D	4.7%D	Y

Comments: Rounding

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 2, 2016

Parameters: Explosives

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1606708

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-045-061616	K1606708-001	Soil	06/16/16
FTBL-IS-036-061616	K1606708-002	Soil	06/16/16
FTBL-IS-037-061616	K1606708-003	Soil	06/16/16
FTBL-IS-031-061616	K1606708-004	Soil	06/16/16
FB061616	K1606708-005	Water	06/16/16
FTBL-IS-045-061616MS	K1606708-001MS	Soil	06/16/16
FTBL-IS-045-061616MSD	K1606708-001MSD	Soil	06/16/16
FTBL-IS-045-061616DUP	K1606708-001DUP	Soil	06/16/16
FTBL-IS-045-061616TRP	K1606708-001TRP	Soil	06/16/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

Retention time windows were established as required by the method.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG1604920-3	06/20/16	Pentaerythritol tetranitrate	1.5 ug/L	All water samples in SDG K1606708

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

V. Field Blanks

Sample FB061616 was identified as a field blank. No contaminants were found.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
FTBL-IS-045-061616MS/MSD (FTBL-IS-045-061616)	HMX 3,5-Dinitroaniline	71 (74-124) 79 (86-118)	- -	UJ (all non-detects) UJ (all non-detects)	A

Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
KWG1604920-1/-2 (All water samples in SDG K1606708)	HMX	64 (65-135)	54 (65-135)	UJ (all non-detects)	P
	1,3,5-Trinitrobenzene	-	68 (73-125)	UJ (all non-detects)	
	1,3-Dinitrobenzene	76 (78-120)	66 (78-120)	UJ (all non-detects)	
	3,5-Dinitroaniline	-	64 (71-117)	UJ (all non-detects)	
	4-Amino-2,6-dinitrotoluene	-	66 (76-125)	UJ (all non-detects)	
	2-Amino-4,6-dinitrotoluene	77 (79-120)	65 (79-120)	UJ (all non-detects)	
	2,4,6-Trinitrotoluene	-	64 (71-123)	UJ (all non-detects)	
	2,6-Dinitrotoluene	63 (77-127)	58 (77-127)	UJ (all non-detects)	
	2,4-Dinitrotoluene	-	69 (78-121)	UJ (all non-detects)	
	2-Nitrotoluene	68 (70-127)	61 (70-127)	UJ (all non-detects)	
	4-Nitrotoluene	67 (71-127)	60 (71-127)	UJ (all non-detects)	
	3-Nitrotoluene	69 (73-125)	60 (73-125)	UJ (all non-detects)	
	Nitroglycerin	-	69 (74-127)	UJ (all non-detects)	
	Pentaerythritol tetranitrate	-	72 (73-127)	UJ (all non-detects)	
KWG1605327-7 (All soil samples in SDG K1606708)	3,5-Dinitroaniline	82 (86-118)	-	UJ (all non-detects)	P

Relative percent differences (RPD) were within QC limits.

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits with the following exceptions:

SRM ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
SRM KWG1605327-12	HMX 1,3,5-Trinitrobenzene 3,5-Dinitroaniline Tetryl 4-Amino-2,6-dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene Nitroglycerin	64 (74-124) 70 (80-116) 62 (86-118) 44 (68-135) 59 (64-127) 65 (71-120) 71 (79-117) 62 (73-124)	All soil samples in SDG K1606708	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

All compound quantitations met validation criteria.

XI. Target Compound Identifications

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R, LCS/LCSD %R, and SRM %R, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Explosives - Data Qualification Summary - SDG K1606708

Sample	Compound	Flag	A or P	Reason
FTBL-IS-045-061616	HMX 3,5-Dinitroaniline	UJ (all non-detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
FB061616	HMX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene 3,5-Dinitroaniline 4-Amino-2,6-dinitrotoluene 2-Amino-4,6-dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene Nitroglycerin Pentaerythritol tetranitrate	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Laboratory control samples (%R)
FTBL-IS-045-061616 FTBL-IS-036-061616 FTBL-IS-037-061616 FTBL-IS-031-061616	3,5-Dinitroaniline	UJ (all non-detects)	P	Laboratory control samples (%R)
FTBL-IS-045-061616 FTBL-IS-036-061616 FTBL-IS-037-061616 FTBL-IS-031-061616	HMX 1,3,5-Trinitrobenzene 3,5-Dinitroaniline Tetryl 4-Amino-2,6-dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene Nitroglycerin	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Standard reference materials (%R)

Fort Bliss, Castner Range
Explosives - Laboratory Blank Data Qualification Summary - SDG K1606708

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Explosives - Field Blank Data Qualification Summary - SDG K1606708

No Sample Data Qualified in this SDG

LDC #: 36919B40
SDG #: K1606708
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 8/25/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A A	RSO ≤ 15% 1 CV = 20%
III.	Continuing calibration	A	CV ≤ 20%
IV.	Laboratory Blanks	W	
V.	Field blanks	ND	FB = 5
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	W/A	
VIII.	Laboratory control samples	W	LES/D. SRM
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	A	
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-045-061616	K1606708-001	Soil	06/16/16
2	FTBL-IS-036-061616	K1606708-002	Soil	06/16/16
3	FTBL-IS-037-061616	K1606708-003	Soil	06/16/16
4	FTBL-IS-031-061616	K1606708-004	Soil	06/16/16
5	FB061616	K1606708-005	Water	06/16/16
6	FTBL-IS-045-061616MS	K1606708-001MS	Soil	06/16/16
7	FTBL-IS-045-061616MSD	K1606708-001MSD	Soil	06/16/16
8	FTBL-IS-045-061616DUP	K1606708-001DUP	Soil	06/16/16
9	FTBL-IS-045-061616TRP	K1606708-001TRP	Soil	06/16/16
10				
11				
12				
13				

Notes:

KW#1604920-3				
KW#1605327-8				

Method: GC ☒ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 20\%$ <u>15%</u> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Field Blanks				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

LDC #: 36919 B40

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer: SL

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L.. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Pentaerythritol tetranitrate		P. Fenthion		
Q.	Q. 3,5-Dinitroaniline		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 34919BAD

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1BlanksReviewer: 92nd Reviewer: 82METHOD: GC/MS HP20

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ N N/A Were all samples associated with a given method blank?
☒ N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
☒ N N/A Was a method blank performed with each extraction batch?
☒ N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Blank extraction date: 6/20/16 Blank analysis date: 6/29/16Conc. units: ug/LAssociated samples: All H20s

Compound	Blank ID	Sample Identification							
KN	1604920-3								
P	1.5								

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification							

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y	N	N/A	Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?
---	---	-----	--

[illegible]

VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

☒ N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?☒ N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

☒ N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	KN 604920-1	A	64 (65-135)	54 (65-135)	()	all H ₂ O's (ND)	↓/N/A
	-2	C	()	68 (73-125)	()		
		D	76 (78-120)	66 (78-120)	()		
		R	()	64 (71-117)	()		
		H	()	66 (76-125)	()		
		I	77 (79-120)	65 (79-120)	()		
		F	()	64 (71-123)	()		
		K	63 (77-127)	58 (77-127)	()		
		J	()	69 (78-120)	()		
		L	68 (70-127)	61 (70-127)	()		
		N	67 (71-127)	60 (71-127)	()		
		M	69 (73-125)	60 (73-125)	()		
		O	()	69 (74-127)	()		
		P	()	72 (73-127)	()		↓
			()	()	()		
			()	()	()		
	SRM KN 605327-12	A	64 (74-124)	()	()	all soils (ND)	↓/N/A
		C	70 (80-116)	()	()		
		R	62 (86-118)	()	()		
		E	44 (68-125)	()	()		
		H	59 (64-127)	()	()		
		F	65 (71-120)	()	()		
		K	71 (79-117)	()	()		
		O	62 (73-124)	()	()		↓

LDC #: 36919B40

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

Page: 1 of 1Reviewer: Q2nd Reviewer: PMMETHOD: GC _____ HPLC ☒

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = $100 * (S/X)$

A = Area of compound,

C = Concentration of compound,

S = Standard deviation of the CF

X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (1000 std)	CF (1000 std)	Average CF (initial)	Average CF (initial)	%RSD	%RSD
1	1CAZ (LC08)	4/8/16	M	24900	24904	26800	26800	11.7	11.8
2	1CAZ (LC10)	3/15/16	D	19300	19300	19600	19620	10.7	10.7
3	1CAL (LC10)	4/15/16	A	14600	14644	15600	15589	9.4	9.6
4	1CAZ (LC10)	7/13/16	A	44200	44390	44200	44200	12.1	12.0
			G	41800	41765	42200	42200	0.7	0.7
			D	19500	19466	19300	19288	9.2	9.0

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3699340

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: GC _____ HPLC ✓

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
 CF = A/C

Where: ave. CF = initial calibration average CF
 CF = continuing calibration CF
 A = Area of compound
 C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(lcal)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	06280013	6/29/16	O	19600	20600	20611	5	5
			A	15600	14300	14286	8	8
2	06280020	7/1/16	A	15600	13500	13521	13	13
3	716000198	7/19/16	A	14200	14500	14470	2	2
			F	42200	43500	43492	3	3
			D	19300	21000	20986	9	9
4	071800245	7/23/16	M	26800	28400	28387	6	6
	(LC08)							
	07180024		M	26800	28300	28287	5	5

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36919B40

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: Q
2nd reviewer: SM

METHOD: GC ☒ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100
Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 5

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
1-chloro-3-nitrobenzene	C18	5000	3329	67	67	0

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
1-chloro-3-nitrobenzene	C18	5000	3172	63	63	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 36919B40

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: GC ☒ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$ Where SSC = Spiked sample concentration SC = Sample concentration
RPD = $((SSCMS - SSCMSD) * 2) / (SSCMS + SSCMSD) * 100$ SA = Spike added
MS = Matrix spike MSD = Matrix spike duplicate

MS/MSD samples: 6/7

Compound	Spike Added (MS/MS)		Sample Conc. (MS/MS)	Spike Sample Concentration (MS/MS)		Matrix spike		Matrix Spike Duplicate		MS/MSD		
	MS	MSD		---	MS	MSD	Percent Recovery		Percent Recovery		RPD	
							Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)												
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)	2.01	2.01	ND	1.42	1.60	71	71	79	80	12	12	
2,4,6-Trinitrotoluene (8330)	↓	↓	↓	1.69	1.90	84	84	94	94	12	12	

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

METHOD: GC ☒ HPLC

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA
RPD = | SSCLCS - SSCLCSD | * 2/(SSCLCS + SSCLCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery

SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: KW1604920-1/-2

Compound	Spike Added (<u>1.44</u>)		Spiked Sample Concentration (<u>1.44</u>)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)	<u>8.00</u>	<u>8.00</u>	<u>5.11</u>	<u>4.34</u>	<u>64</u>	<u>64</u>	<u>54</u>	<u>54</u>	<u>16</u>	<u>16</u>
2,4,6-Trinitrotoluene (8330)	<u>↓</u>	<u>↓</u>	<u>5.91</u>	<u>5.11</u>	<u>74</u>	<u>74</u>	<u>64</u>	<u>64</u>	<u>15</u>	<u>16</u>

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36919B40VALIDATION FINDINGS WORKSHEET
Sample Calculation VerificationPage: 61
Reviewer: [Signature]
2nd Reviewer: [Signature]METHOD: GC ☒ HPLCY N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= $\frac{(A)(F_v)(D_f)}{(RF)(V_s \text{ or } W_s)(\%S/100)}$

Example:

Sample ID. A11 Compound Name N₂O
#6: A

$$\text{Concentration} = \frac{(25027655)(8)(1)}{(14200)(10.0443)(0.991)(1000)}$$
$$= 1.42 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentrations ()	Recalculated Results Concentrations ()	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 2, 2016

Parameters: Perchlorate

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1606708

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-045-061616	K1606708-001	Soil	06/16/16
FTBL-IS-036-061616	K1606708-002	Soil	06/16/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perchlorate by Environmental Protection Agency (EPA) SW 846 Method 6850

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance check was performed prior to initial calibration.

All perchlorate ion signal to noise ratio requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

The isotope ratios were within QC limits.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 15.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 15.0%.

The isotope ratios were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Internal Standards

All internal standard recoveries (%R) were within QC limits.

XI. Compound Quantitation

All compound quantitations were within validation criteria.

XII. Target Compound Identifications

All target compound identifications were within validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Perchlorate - Data Qualification Summary - SDG K1606708

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Perchlorate - Laboratory Blank Data Qualification Summary - SDG K1606708

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Perchlorate - Field Blank Data Qualification Summary - SDG K1606708

No Sample Data Qualified in this SDG

LDC #: 36919B87 **VALIDATION COMPLETENESS WORKSHEET**
 SDG #: K1606708 **Level IV**
 Laboratory: ALS Environmental

Date: 8/24/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD = 15.70. ICV = 15.70
IV.	Continuing calibration	A	CCV = 15.70
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	A	LCS, LCS
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB = Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-045-061616	K1606708-001	Soil	06/16/16
2	FTBL-IS-036-061616	K1606708-002	Soil	06/16/16
3				
4				
5				
6				
7				
8				
9				

Notes:

KR1607985-05					

Method: Perchlorate (EPA SW 846 Method 6850)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	/			
Was cooler temperature criteria met?	/			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the specified criteria?	/			
Were the Perchlorate ions within ± 0.3 m/z of mass 99, 101 and 107?			/	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) $< 20\%$ <u>1.570</u> ?	/			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of ≥ 0.990 ?			/	
Was the isotope ratio of $^{35}\text{Cl}/^{37}\text{Cl}$ or m/z 99/101 within 2.3 to 3.8?	/			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	/			
Were all percent differences (%D) $\leq 15\%$?	/			
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	/			
Were all percent differences (%D) of the mid-range continuing calibration $\leq 15\%$?	/			
Were all percent differences (%D) of the low-range continuing calibration $\leq 50\%$?			/	
Was the isotope ratio of $^{35}\text{Cl}/^{37}\text{Cl}$ or m/z 99/101 within 2.3 to 3.8?	/			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed for each matrix and concentration?	/			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Field blanks				
Were field blanks identified in this SDG?		/		
Were target compounds detected in the field blanks?			/	
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	/			

Validation Area	Yes	No	NA	Findings/Comments
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		/		
Were target compounds detected in the field duplicates?			/	
XI. Internal standards				
Were internal standard area counts within $\pm 50\%$ of the associated calibration standard?	/			
Were retention times of m/z 89 ($\text{Cl}^{18}\text{O}_3^-$) within 0.2 minutes of m/z 83 (ClO_3^-)?	/			
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Target compound identification				
Were relative retention times (RRT's) within 0.98 to 1.02?	/			
Was the isotope ratio of $^{35}\text{Cl}/^{37}\text{Cl}$ or m/z 99/101 within 2.3 to 3.8?	/			
XIV. System performance				
System performance was found to be acceptable.	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

LDC #: 36919B57

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: g
2nd Reviewer: sh

METHOD: GC ✓ HPLC MS

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = $100 * (S/X)$

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (10 std)	CF (10 std)	Average CF (initial)	Average CF (initial)	%RSD	%RSD
1	1CAZ	8/8/16	Porchlorate	1.249	1.249	1.240	1.240	2.1	2.1
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 26919287

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1
 Reviewer: 9
 2nd Reviewer: Sh

METHOD: GC ✓ HPLC MS

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
 CF = A/C

Where: ave. CF = initial calibration average CF
 CF = continuing calibration CF
 A = Area of compound
 C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(lcal)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	<u>QY1</u>	<u>8/9/16</u>	<u>Perchlorate</u>	<u>10.0</u>	<u>9.95</u>	<u>9.94</u>	<u>0.5</u>	<u>0.5</u>
		<u>2:02</u>						
2								
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicate Results VerificationMETHOD: GC ☒ HPLC MS

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where: SSC = Spiked sample concentration

SC = Concentration

SA = Spike added

$$\text{RPD} = | \text{SSCLCS} - \text{SSCLCSD} | * 2 / (\text{SSCLCS} + \text{SSCLCSD})$$

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: KR1607985-04

Compound	Spike Added (118/9)		Spiked Sample Concentration (118/9)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
perchlorate	5.00	NA	5.39	NA	108	108				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36919B57

VALIDATION FINDINGS WORKSHEET

Sample Calculation VerificationPage: 1 of 1Reviewer: g2nd Reviewer: snMETHOD: GC ☒ HPLC/MSY N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration = $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

Example:

Sample ID A11 Compound Name NO
LOS

A= Area or height of the compound to be measured

Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound
in the initial calibration

Vs= Initial volume of the sample

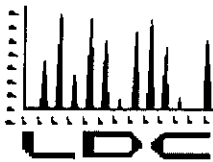
Ws= Initial weight of the sample

%S= Percent Solid

Concentration = $\frac{(243160)(25)(10)}{(1818700)(1.240)(1)}$ = 5.39 mg/g

#	Sample ID	Compound	Reported Concentrations (<u>118/9</u>)	Recalculated Results Concentrations ()	Qualifications
			<u>5.39</u>		

omments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 15, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fractions listed below. This SDG was received on September 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #36998:

<u>SDG #</u>	<u>Fraction:</u>
K1607207	Metals, Explosives, Perchlorate

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

L:\Arcadis\Fort Bliss-Castner Range\36998ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

SDG: K1607207

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 14, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Metals by EPA SW 846 Method 6020A

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

Perchlorate by EPA SW 846 Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. No samples in this SDG were subjected to Level IV evaluation.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), duplicate sample analysis (DUP), triplicate sample analysis (TRP), serial dilution, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), field triplicates, and internal standards.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the methods.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the methods were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by ADR with the exception of two method blanks for metals and three method blanks for explosives. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1607207/ 6020A	ICB/CCB	Antimony	0.076 ug/L	FTBL-IS-133-062816 FTBL-IS-135-062816-A FTBL-IS-135-062816-B FTBL-IS-135-062816-C
K1607207/ 6020A	ICB/CCB	Antimony	0.093 ug/L	FTBL-IS-134-062816
K1607207/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607207

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1607207/ 6020A	FTBL-IS-133-062816	Antimony	0.104 mg/Kg	0.104U mg/Kg
K1607207/ 6020A	FTBL-IS-135-062816-A	Antimony	0.176 mg/Kg	0.176U mg/Kg
K1607207/ 6020A	FTBL-IS-135-062816-B	Antimony	0.166 mg/Kg	0.166U mg/Kg
K1607207/ 6020A	FTBL-IS-135-062816-C	Antimony	0.161 mg/Kg	0.161U mg/Kg
K1607207/ 6020A	FTBL-IS-134-062816	Antimony	0.093 mg/Kg	0.093U mg/Kg
K1607207/ 6020A	EB062816	Beryllium Lead	0.007 ug/L 0.017 ug/L	0.007U ug/L 0.017U ug/L

VI. Field Blanks

One equipment blank was collected and analyzed for metals and explosives. The equipment blank had detections for metals and explosives. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of metals in one MS/MSD pair. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R were within QC limits.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

Duplicates (DUP) and triplicate (TRP) sample analyses were performed on an associated project sample. Results were within QC limits.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for explosives. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

XIII. Field Triplicates

One set of field triplicates were collected and analyzed for metals, explosives and perchlorate. All RSDs were within QC limits with the exception of several metals and several explosives in one triplicate. All RPDs were within QC limits. No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The field triplicate comparisons are provided in Enclosures I and II.

XIV. Internal Standards

All internal standard areas and retention times or percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1607207/ 8330B	FTBL-IS-133-062816	1,3-Dinitrobenzene Nitrobenzene 2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607207/ 8330B	FTBL-IS-135-062816-B	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1607207/ 8330B	FTBL-IS-135-062816-C	1,3-Dinitrobenzene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607207/ 8330B	EB062816	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to LCS/LCSD %R, data were qualified as estimated in one sample.

Due to SRM %R, data were qualified as estimated in five samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in four samples.

Due to results reported below the LOQ, data were qualified as estimated in five samples.

Due to laboratory blank contamination, data were qualified as not detected in three samples.

Due to calibration blank contamination, data were qualified as not detected in six samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
28-Jun-2016	FTBL-IS-134-062816	K1607207-001	N	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-134-062816	K1607207-001	N	METHOD	8330B	III
28-Jun-2016	FTBL-IS-134-062816MS	K1607207-001MS	MS	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-134-062816MSD	K1607207-001SD	MSD	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-134-062816REP1	KWG1605749-1	REP	METHOD	8330B	III
28-Jun-2016	FTBL-IS-134-062816REP2	KWG1605749-2	REP	METHOD	8330B	III
28-Jun-2016	FTBL-IS-134-062816MS	KWG1605749-3	MS	METHOD	8330B	III
28-Jun-2016	FTBL-IS-134-062816MSD	KWG1605749-4	MSD	METHOD	8330B	III
28-Jun-2016	FTBL-IS-133-062816	K1607207-002	N	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-133-062816	K1607207-002	N	METHOD	8330B	III
28-Jun-2016	FTBL-IS-135-062816-A	K1607207-003	FT	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-135-062816-A	K1607207-003	FT	METHOD	6850	III
28-Jun-2016	FTBL-IS-135-062816-A	K1607207-003	FT	METHOD	8330B	III
28-Jun-2016	FTBL-IS-135-062816-ARE	K1607207-003RE	FT	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-135-062816-AMS	KQ1608639-01MS	MS	METHOD	6850	III
28-Jun-2016	FTBL-IS-135-062816-AMSD	KQ1608639-02SD	MSD	METHOD	6850	III
28-Jun-2016	FTBL-IS-135-062816-B	K1607207-004	N	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-135-062816-B	K1607207-004	N	METHOD	6850	III
28-Jun-2016	FTBL-IS-135-062816-B	K1607207-004	N	METHOD	8330B	III
28-Jun-2016	FTBL-IS-135-062816-BRE	K1607207-004RE	N	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-135-062816-C	K1607207-005	N	EPA 3050B	6020A	III
28-Jun-2016	FTBL-IS-135-062816-C	K1607207-005	N	METHOD	6850	III
28-Jun-2016	FTBL-IS-135-062816-C	K1607207-005	N	METHOD	8330B	III
28-Jun-2016	FTBL-IS-135-062816-CRE	K1607207-005RE	N	EPA 3050B	6020A	III
28-Jun-2016	EB062816	K1607207-006	EB	CLFAA	6020A	III
28-Jun-2016	EB062816	K1607207-006	EB	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	METALS
Method:	6020A
Matrix:	Soil

Sample ID: FTBL-IS-133-062816		Collected: 6/28/2016 9:05:00 AM		Analysis Type: Initial			Dilution: 5.0		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.104	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID:FTBL-IS-134-062816			Collected:AM		Analysis Type:Initial			Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.093	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID:FTBL-IS-135-062816-A			6/28/2016 11:00:00 Collected:AM		Analysis Type:Initial			Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.176	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

6/28/2016 1:00:00									
Sample ID:FTBL-IS-135-062816-B		Collected:PM		Analysis Type:Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.166	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID:FTBL-IS-135-062816-C		6/28/2016 2:00:00 PM		Analysis Type:Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.161	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Method Category:	METALS
Method:	6020A
Matrix:	Water

Sample ID:EB062816		Collected:PM		6/28/2016 3:30:00				Analysis Type:Initial/TOT		Dilution: 1.0	
Analyte		Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code	
BERYLLIUM		0.007	J	0.020	LOD	0.020	LOQ	ug/L	U	Mb, Cb	
LEAD		0.017	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb	
NICKEL		0.07	J	0.05	LOD	0.20	LOQ	ug/L	J	RI	

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/14/2016 8:54:02 AM

ADR version 1.9.0.325

Page 1 of 4

Data Qualifier Summary

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-133-062816		Collected: 6/28/2016 9:05:00 AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.021	JN	0.041	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJdg
2,6-DINITROTOLUENE	0.019	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJdg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.014	JN	0.021	LOD	0.081	LOQ	mg/Kg	U	Mb, ProfJdg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-134-062816		Collected: 6/28/2016 9:00:00 AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-135-062816-A		Collected: 6/28/2016 11:00:00 AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/14/2016 8:54:02 AM

ADR version 1.9.0.325

Page 2 of 4

Data Qualifier Summary

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

6/28/2016 1:00:00									
Sample ID: FTBL-IS-135-062816-B		Collected: PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U,i	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0045	JN	0.021	LOD	0.081	LOQ	mg/Kg	U	Mb, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

6/28/2016 2:00:00									
Sample ID: FTBL-IS-135-062816-C		Collected: PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.035	JN	0.041	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg
2,6-DINITROTOLUENE	0.040	U,i	0.040	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.15	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Method Category:	SVOA
Method:	8330B
Matrix:	Water

6/28/2016 3:30:00									
Sample ID: EB062816		Collected: PM		Analysis Type: Initial/TOT				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.38	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	0.93	JN	1.0	LOD	1.0	LOQ	ug/L	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/14/2016 8:54:02 AM

ADR version 1.9.0.325

Page 3 of 4

Data Qualifier Summary

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Lcs	Laboratory Control Spike Lower Estimation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/14/2016 8:54:02 AM

ADR version 1.9.0.325

Page 4 of 4

Enclosure I
Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

K1607207

Method Blank Outlier Report

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608627-01	8/5/2016 6:55:00 PM	COPPER LEAD ZINC	0.027 mg/Kg 0.006 mg/Kg 0.12 mg/Kg	FTBL-IS-133-062816 FTBL-IS-134-062816 FTBL-IS-135-062816-A FTBL-IS-135-062816-ARE FTBL-IS-135-062816-B FTBL-IS-135-062816-BRE FTBL-IS-135-062816-C FTBL-IS-135-062816-CRE

Method: 6020A

Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB062816

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB062816(Initial/TOT)	BERYLLIUM	0.007 ug/L	0.007U ug/L
EB062816(Initial/TOT)	LEAD	0.017 ug/L	0.017U ug/L

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605749-6	8/18/2016 7:22:00 PM	NITROBENZENE	0.012 mg/Kg	FTBL-IS-133-062816 FTBL-IS-134-062816 FTBL-IS-135-062816-A FTBL-IS-135-062816-B FTBL-IS-135-062816-C
KWG1605749-7	8/18/2016 8:35:00 PM	2-NITROTOLUENE NITROBENZENE	0.015 mg/Kg 0.0078 mg/Kg	FTBL-IS-133-062816 FTBL-IS-134-062816 FTBL-IS-135-062816-A FTBL-IS-135-062816-B FTBL-IS-135-062816-C

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-133-062816(Initial)	NITROBENZENE	0.014 mg/Kg	0.014U mg/Kg
FTBL-IS-135-062816-B(Initial)	NITROBENZENE	0.0045 mg/Kg	0.0045U mg/Kg

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 3:51:56 PM

ADR version 1.9.0.325

Page 1 of 2

Method Blank Outlier Report

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605348-3	7/19/2016 2:35:00 PM	2,6-DINITROTOLUENE	0.084 ug/L	EB062816

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 3:51:56 PM

ADR version 1.9.0.325

Page 2 of 2

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-134-062816MS (Dry) FTBL-IS-134-062816MSD (Dry) (FTBL-IS-134-062816)	ANTIMONY	46	44	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 105%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 3:52:46 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605749-9	1,3,5-TRINITROBENZENE	76	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J(all detects) UJ(all non-detects)
(FTBL-IS-133-062816	2,6-DINITROTOLUENE	78	-	79.00-117.00	-	2,6-DINITROTOLUENE	
FTBL-IS-134-062816	3,5-Dinitroaniline	68	-	86.00-118.00	-	3,5-Dinitroaniline	
FTBL-IS-135-062816-A	HMX	63	-	74.00-124.00	-	HMX	
FTBL-IS-135-062816-B	NITROGLYCERIN	66	-	73.00-124.00	-	NITROGLYCERIN	
FTBL-IS-135-062816-C)	Pentaerythritol Tetranitrate (PETN)	66	-	72.00-128.00	-	Pentaerythritol Tetranitrate (PETN)	
	Tetryl	52	-	68.00-135.00	-	Tetryl	

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605348-1 (EB062816)	2,6-DINITROTOLUENE	75	-	77.00-127.00	-	2,6-DINITROTOLUENE	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 3:51:59 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-135-062816-	FTBL- IS-135-062816-	FTBL- IS-135-062816-			
LEAD	36.5	39.6	41.9	6.89	20.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-135-062816-A	FTBL- IS-135-062816-B	FTBL- IS-135-062816-C			
ANTIMONY	0.176	0.166	0.161	4.56	20.00	No Qualifiers Applied
ARSENIC	7.98	7.80	7.98	1.31	20.00	
BERYLLIUM	2.79	2.89	2.68	3.77	20.00	
COPPER	14.8	15.7	15.0	3.12	20.00	
NICKEL	4.82	5.10	5.11	3.29	20.00	
ZINC	83.8	90.1	83.1	4.5	20.00	

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-135-062816-A	FTBL- IS-135-062816-B	FTBL- IS-135-062816-C			
1,3-DINITROBENZENE	0.041 U	0.041 U	0.035	NC	20.00	No Qualifiers Applied
NITROBENZENE	0.021 U	0.0045	0.021 U	NC	20.00	
NITROGLYCERIN	0.21 U	0.21 U	0.15	NC	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 3:52:04 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607207

Laboratory: ALS_K

EDD Filename: K1607207_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-133-062816	1,3-DINITROBENZENE	JN	0.021	0.041	LOQ	mg/Kg	J (all detects)
	2,6-DINITROTOLUENE	JN	0.019	0.041	LOQ	mg/Kg	
	NITROBENZENE	JN	0.014	0.081	LOQ	mg/Kg	
FTBL-IS-135-062816-B	NITROBENZENE	JN	0.0045	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-135-062816-C	1,3-DINITROBENZENE	JN	0.035	0.041	LOQ	mg/Kg	J (all detects)
	NITROGLYCERIN	JN	0.15	0.21	LOQ	mg/Kg	

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB062816	BERYLLIUM	J	0.007	0.020	LOQ	ug/L	J (all detects)
	LEAD	J	0.017	0.020	LOQ	ug/L	
	NICKEL	J	0.07	0.20	LOQ	ug/L	

Method: 8330B

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB062816	NITROGLYCERIN	JN	0.93	1.0	LOQ	ug/L	J (all detects)

LDC #: 36998A4a
 SDG #: K1607207
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR# 37

Date: 6/28/16
 Page: 1 of 1
 Reviewer: SD
 2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MSID = SB out; B in = NA
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	SER = ()
X.	Laboratory control samples	N	Not reviewed for ADR validation.
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-134-062816	K1607207-001	Soil	06/28/16
2	FTBL-IS-133-062816	K1607207-002	Soil	06/28/16
3	FTBL-IS-135-062816-A	K1607207-003	Soil	06/28/16
4	FTBL-IS-135-062816-B	K1607207-004	Soil	06/28/16
5	FTBL-IS-135-062816-C	K1607207-005	Soil	06/28/16
6	EB062816	K1607207-006	Water	06/28/16
7	FTBL-IS-134-062816MS	K1607207-001MS	Soil	06/28/16
8	FTBL-IS-134-062816MSD	K1607207-001MSD	Soil	06/28/16
9				
10				
11				
12				
13				

Notes:

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: *SL*

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2-5 (5X Dil)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	2	3	4	5						
Sb			0.076	0.19	0.104	0.176	0.166	0.161						

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1 (5X Dil)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	1									
Sb			0.093	0.2325	0.093									

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	6									
Sb			0.020	0.1										
Be			0.009	0.045	0.007									
Pb			0.008	0.04	0.017									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36998A40
 SDG #: K1607207
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 7/6/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	Initial calibration/ICV	A/A	RSD ≤ 15.7% γ^2 1 CV ≤ 20%
III.	Continuing calibration	M	CCV ≤ 20%
IV.	Laboratory Blanks	N	
V.	Field blanks	M	EB = 6 (>5x)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / TR	N/A	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	M	TP = 3 + 4 + 6
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-134-062816	K1607207-001	Soil	06/28/16
2	FTBL-IS-133-062816	K1607207-002	Soil	06/28/16
3	FTBL-IS-135-062816-A	K1607207-003	Soil	06/28/16
4	FTBL-IS-135-062816-B	K1607207-004	Soil	06/28/16
5	FTBL-IS-135-062816-C	K1607207-005	Soil	06/28/16
6	EB062816	K1607207-006	Water	06/28/16
7	FTBL-IS-134-062816MS	K1607207-001MS	Soil	06/28/16
8	FTBL-IS-134-062816MSD	K1607207-001MSD	Soil	06/28/16
9	FTBL-IS-134-062816DUP	K1607207-001DUP	Soil	06/28/16
10	FTBL-IS-134-062816TRP	K1607207-001TRP	Soil	06/28/16
11				
12				
13				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes:

LDC #: 36998A40

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

Page: 1 of 1
Reviewer: 9

METHOD: GC ☒ HPLC

2nd Reviewer: 83

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N/A Were continuing calibration standards analyzed at the required frequencies?

Y/N/N/A	Did the continuing calibration standards meet the %D validation criteria of $\leq 20.0\%$?
---------	---

~~Level IV Only~~

Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

[illegible]

LDC#: 36998A40**VALIDATION FINDINGS WORKSHEET**
Field TriplicatesPage: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]**METHOD:** Explosives (EPA SW846 Method 8330B)Y/N/NA

Were lab triplicates sets identified in this SDG?

Y/N/NA

Were target analytes detected in the field triplicate sets?

Compound	Concentration (mg/kg)			RSD (≤20%)	Qual
	3	4	5		
F	0.021U	0.0045	0.021U	61	NQ
D	0.041U	0.041U	0.035	9	NQ
O	0.21U	0.21U	0.15	18	NQ

NQ = One or two results were < 5x the Limit of Quantitation (LOQ), therefore no data were qualified.

V:\FIELD REPLICATES\36998A40_Arcadis.wpd

LDC #: 36998A10

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IVD Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?
Y N N/A Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
If no, please see findings below.

#	Compound Name	Sample ID	%RPD Between Two Columns/Detectors Limit ($\leq 40\%$)	Qualifications
	D, F, K	2	No confirmation	NT det / A ↓
	F	4		
	D, O	5		
	X O	6		

Comments: See sample calculation verification worksheet for recalculations

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSB ≤ 1570 ICV ≤ 1570
IV.	Continuing calibration	A	CCV ≤ 1570
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	ND	TP = 1+2+3
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

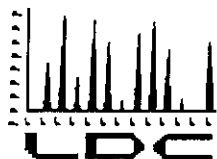
ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-135-062816-A	K1607207-003	Soil	06/28/16
2	FTBL-IS-135-062816-B	K1607207-004	Soil	06/28/16
3	FTBL-IS-135-062816-C	K1607207-005	Soil	06/28/16
4	FTBL-IS-135-062816-AMS	K1607207-003MS	Soil	06/28/16
5	FTBL-IS-135-062816-AMSD	K1607207-003MSD	Soil	06/28/16
6				
7				
8				
9				
10				

Notes:



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 20, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 29, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #36953:

SDG

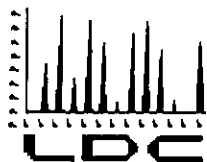
Fraction:

K1607357, K1607397
K1607483, K1607580
K1607636

Metals, Explosives, Perchlorate

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

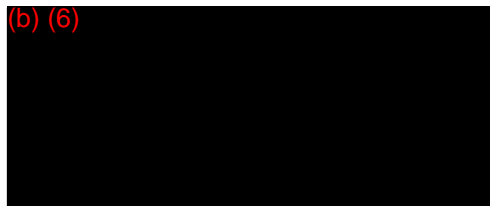
- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014



Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)



Project Manager/Senior Chemist

LDC #36953 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

L:\Arcadis\Fort Bliss-Castner Range\36953ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

**SDGs: K1607357, K1607397, K1607483, K1607580,
and K1607636**

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 19, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Metals by Environmental Protection Agency (EPA) SW 846 Method 6020A
Explosives by EPA SW 846 Method 8330B
Perchlorate by EPA SW 846 Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, field blank, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), duplicate sample analysis (DUP), serial dilution, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), sample reference materials (SRM), field triplicates, and internal standards. Approximately 14 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the methods.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the methods were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by ADR with the exception of several metals and several explosives. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1607357/ 6020A	ICB/CCB	Antimony	0.062 ug/L	FTBL-IS-126-063016 FTBL-IS-127-063016 FTBL-IS-123-063016 FTBL-IS-136-063016 FTBL-IS-120-063016 FTBL-IS-119-063016 FTBL-IS-118-063016
K1607357/ 6020A	ICB/CCB	Antimony	0.078 ug/L	FTBL-IS-122-063016
K1607357/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607357

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1607397/ 6020A	ICB/CCB	Antimony	0.062 ug/L	FTBL-IS-117-070116 FTBL-IS-149-070116-A FTBL-IS-149-070116-B FTBL-IS-149-070116-C FTBL-IS-146-070116-A FTBL-IS-146-070116-B FTBL-IS-146-070116-C
K1607397/ 6020A	ICB/CCB	Antimony	0.078 ug/L	FTBL-IS-116-070116
K1607397/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607397
K1607483/ 6020A	ICB/CCB	Antimony	0.081 ug/L	FTBL-IS-143-070516
K1607483/ 6020A	ICB/CCB	Antimony	0.043 ug/L	FTBL-IS-147-070516 FTBL-IS-144-070516 FTBL-IS-142-070516 FTBL-IS-141-070516 FTBL-IS-148-070516 FTBL-IS-145-070516
K1607580/ 6020A	ICB/CCB	Antimony	0.043 ug/L	All soil samples in SDG K1607580
K1607580/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607580
K1607636/ 6020A	ICB/CCB	Antimony	0.046 ug/L	FTBL-IS-057-070716 FTBL-IS-050-070716 FTBL-IS-049-070716 FTBL-IS-034-070716 FTBL-IS-056-070716
K1607636/ 6020A	ICB/CCB	Antimony	0.045 ug/L	FTBL-IS-048-070716
K1607636/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607636

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated calibration blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1607357/ 6020A	FTBL-IS-136-063016	Antimony	0.140 mg/Kg	0.140U mg/Kg
K1607357/ 6020A	FTBL-IS-122-063016	Antimony	0.155 mg/Kg	0.155U mg/Kg
K1607357/ 6020A	EB063016	Beryllium Lead	0.007 ug/L 0.032 ug/L	0.007U ug/L 0.032U ug/L
K1607397/ 6020A	FTBL-IS-117-070116	Antimony	0.098 mg/Kg	0.098U mg/Kg
K1607397/ 6020A	FTBL-IS-149-070116-A	Antimony	0.095 mg/Kg	0.095U mg/Kg
K1607397/ 6020A	FTBL-IS-149-070116-B	Antimony	0.094 mg/Kg	0.094U mg/Kg
K1607397/ 6020A	FTBL-IS-149-070116-C	Antimony	0.095 mg/Kg	0.095U mg/Kg
K1607397/ 6020A	FTBL-IS-146-070116-A	Antimony	0.134 mg/Kg	0.134U mg/Kg
K1607397/ 6020A	FTBL-IS-146-070116-B	Antimony	0.124 mg/Kg	0.124U mg/Kg
K1607397/ 6020A	FTBL-IS-146-070116-C	Antimony	0.124 mg/Kg	0.124U mg/Kg
K1607397/ 6020A	EB070116	Beryllium	0.008 ug/L	0.008U ug/L
K1607483/ 6020A	FTBL-IS-143-070516	Antimony	0.147 mg/Kg	0.147U mg/Kg
K1607580/ 6020A	EB070616	Lead	0.014 ug/L	0.014U ug/L
K1607636/ 6020A	EB070716	Lead	0.010 ug/L	0.010U ug/L
K1607636/ 6020A	EB070516	Lead	0.026 ug/L	0.026U ug/L

VI. Field Blanks

Five equipment blanks were collected and analyzed for metals and explosives. All equipment blanks had detections for several metals and explosives. The associated sample results were qualified as non-detected (U) due to equipment blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the equipment blanks were not qualified. The equipment blank outlier reports are presented in Enclosure I.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several metals in three MS/MSD pairs, explosives in four MS/MSD pairs and perchlorate in one MS/MSD pair. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R was within QC limits. The details are provided in Enclosures I and II.

X. Replicate Sample Analysis

Laboratory replicates (REP) sample analysis was performed on an associated project sample. Results were within QC limits.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits with the following exceptions:

SDG/ Method	Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
K1607357/ 6020A	FTBL-IS-126-063016	Lead	16 (≤10)	FTBL-IS-126-063016	J (all detects)	A

XII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of three LCS/LCSD pairs and five LCSs for explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. Tetryl results in seven samples were qualified as rejected (R) due to an SRM %R grossly outside QC limits (i.e., $\leq 10\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosures I and II.

XIII. Field Triplicates

Two sets of field triplicates were collected and analyzed for explosives and metals. All RSDs were within QC limits with the exception of several metals and explosives in two triplicates. No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The field triplicate comparisons are provided in Enclosure I.

XIV. Internal Standards

All internal standard percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1607357/ 8330B	FTBL-IS-120-063016 FTBL-IS-119-063016	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607357/ 8330B	EB063016	4-Amino-2,6-dinitrotoluene 2,6-Dinitrotoluene 3-Nitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects)	A
K1607397/ 8330B	EB070116 FTBL-IS-146-070116-A	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1607397/ 8330B	FTBL-IS-149-070116-C	Pentaerythritol tetranitrate	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607397/ 8330B	FTBL-IS-146-070116-C	2,4-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607483/ 8330B	EB070516	4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects)	A
K1607483/ 8330B	FTBL-IS-148-070516	HMX	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607580/ 8330B	FTBL-IS-085-070616	Nitrobenzene 4-Amino-2,6-dinitrotoluene 2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects)	A
K1607580/ 8330B	FTBL-IS-107-070616	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607580/ 8330B	EB070616	2,6-Dinitrotoluene 4-Nitrotoluene 3-Nitrotoluene Nitroglycerin Pentaerythritol tetranitrate	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects)	A
K1607636/ 8330B	FTBL-IS-050-070716	HMX	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607636/ 8330B	EB070716	4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects)	A

XVI. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Level IV validation for SDG K1607580.

XVII. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to severe SRM %R exceedances, data were qualified as rejected in seven samples.

Due to MS/MSD %R, data were qualified as estimated in four samples.

Due to LCS/LCSD %R, data were qualified as estimated in thirty-nine samples.

Due to serial dilution %D, data were qualified as estimated in one sample.

Due to results not being confirmed, data were qualified as presumptive and estimated in fourteen samples.

Due to results reported below the LOQ, data were qualified as estimated in fourteen samples.

Due to laboratory blank contamination, data were qualified as not detected in five samples.

Due to calibration blank contamination, data were qualified as not detected in fifteen samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-Jun-2016	EB063016	K1607357-009	EB	CLFAA	6020A	S2BVEM
30-Jun-2016	EB063016	K1607357-009	EB	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-126-063016	K1607357-001	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-126-063016	K1607357-001	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-126-063016	K1607357-001	N	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-126-063016MS	K1607357-001MS	MS	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-126-063016MSD	K1607357-001SD	MSD	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-126-063016REP1	KWG1605844-3	REP	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-126-063016REP3	KWG1605844-4	REP	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-126-063016MS	KWG1605844-5	MS	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-126-063016MSD	KWG1605844-6	MSD	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-122-063016	K1607357-002	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-122-063016	K1607357-002	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-122-063016	K1607357-002	N	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-123-063016	K1607357-004	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-123-063016	K1607357-004	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-123-063016	K1607357-004	N	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-123-063016RE	K1607357-004RE	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-127-063016	K1607357-003	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-127-063016	K1607357-003	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-127-063016	K1607357-003	N	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-136-063016	K1607357-005	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-136-063016	K1607357-005	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-136-063016	K1607357-005	N	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-136-063016RE	K1607357-005RE	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-120-063016	K1607357-006	N	EPA 3050B	6020A	S2BVEM

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
30-Jun-2016	FTBL-IS-120-063016	K1607357-006	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-120-063016	K1607357-006	N	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-119-063016	K1607357-007	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-119-063016	K1607357-007	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-119-063016	K1607357-007	N	METHOD	8330B	S2BVEM
30-Jun-2016	FTBL-IS-118-063016	K1607357-008	N	EPA 3050B	6020A	S2BVEM
30-Jun-2016	FTBL-IS-118-063016	K1607357-008	N	METHOD	6850	S2BVEM
30-Jun-2016	FTBL-IS-118-063016	K1607357-008	N	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-117-07116	K1607397-001	N	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-117-07116	K1607397-001	N	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-117-07116MS	KWG1605894-1	MS	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-117-07116MSD	KWG1605894-2	MSD	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-117-07116REP1	KWG1605894-5	REP	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-117-07116REP2	KWG1605894-6	REP	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-116-07116	K1607397-002	N	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-116-07116	K1607397-002	N	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-149-07116-A	K1607397-003	FT	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-149-07116-A	K1607397-003	FT	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-146-07116-A	K1607397-006	FT	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-146-07116-A	K1607397-006	FT	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-149-07116-B	K1607397-004	N	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-149-07116-B	K1607397-004	N	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-146-07116-B	K1607397-007	N	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-146-07116-B	K1607397-007	N	METHOD	8330B	S2BVEM
01-Jul-2016	FTBL-IS-149-07116-C	K1607397-005	N	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-149-07116-C	K1607397-005	N	METHOD	8330B	S2BVEM

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
01-Jul-2016	FTBL-IS-146-07116-C	K1607397-008	N	EPA 3050B	6020A	S2BVEM
01-Jul-2016	FTBL-IS-146-07116-C	K1607397-008	N	METHOD	8330B	S2BVEM
01-Jul-2016	EB070116	K1607397-009	EB	CLFAA	6020A	S2BVEM
01-Jul-2016	EB070116	K1607397-009	EB	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-143-070516	K1607483-001	N	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-143-070516	K1607483-001	N	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-143-070516MS	K1607483-001MS	MS	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-143-070516MSD	K1607483-001SD	MSD	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-143-070516REP1	KWG1605948-1	REP	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-143-070516REP2	KWG1605948-2	REP	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-143-070516MS	KWG1605948-5	MS	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-143-070516MSD	KWG1605948-6	MSD	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-147-070516	K1607483-002	N	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-147-070516	K1607483-002	N	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-142-070516	K1607483-004	N	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-142-070516	K1607483-004	N	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-144-070516	K1607483-003	N	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-144-070516	K1607483-003	N	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-141-070516	K1607483-005	N	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-141-070516	K1607483-005	N	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-148-070516	K1607483-006	N	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-148-070516	K1607483-006	N	METHOD	8330B	S2BVEM
05-Jul-2016	FTBL-IS-145-070516	K1607483-007	N	EPA 3050B	6020A	S2BVEM
05-Jul-2016	FTBL-IS-145-070516	K1607483-007	N	METHOD	8330B	S2BVEM
05-Jul-2016	EB070516	K1607483-008	EB	METHOD	8330B	S2BVEM
05-Jul-2016	EB070516 (2)	K1607636-008	EB	CLFAA	6020A	S2BVEM

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
06-Jul-2016	FTBL-IS-085-070616	K1607580-001	N	EPA 3050B	6020A	S2BVEM
06-Jul-2016	FTBL-IS-085-070616	K1607580-001	N	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-085-070616REP1	KWG1605959-3	REP	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-085-070616REP2	KWG1605959-4	REP	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-085-070616MS	KWG1605959-5	MS	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-085-070616MSD	KWG1605959-6	MSD	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-084-070616	K1607580-002	N	EPA 3050B	6020A	S2BVEM
06-Jul-2016	FTBL-IS-084-070616	K1607580-002	N	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-086-070616	K1607580-003	N	EPA 3050B	6020A	S2BVEM
06-Jul-2016	FTBL-IS-086-070616	K1607580-003	N	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-079-070616	K1607580-004	N	EPA 3050B	6020A	S2BVEM
06-Jul-2016	FTBL-IS-079-070616	K1607580-004	N	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-068-070616	K1607580-005	N	EPA 3050B	6020A	S2BVEM
06-Jul-2016	FTBL-IS-068-070616	K1607580-005	N	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-063-070616	K1607580-006	N	EPA 3050B	6020A	S2BVEM
06-Jul-2016	FTBL-IS-063-070616	K1607580-006	N	METHOD	8330B	S2BVEM
06-Jul-2016	FTBL-IS-107-070616	K1607580-007	N	EPA 3050B	6020A	S2BVEM
06-Jul-2016	FTBL-IS-107-070616	K1607580-007	N	METHOD	8330B	S2BVEM
06-Jul-2016	EB070616	K1607580-008	EB	CLFAA	6020A	S2BVEM
06-Jul-2016	EB070616	K1607580-008	EB	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-057-070716	K1607636-001	N	EPA 3050B	6020A	S4VEM
07-Jul-2016	FTBL-IS-057-070716	K1607636-001	N	METHOD	6850	S4VEM
07-Jul-2016	FTBL-IS-057-070716	K1607636-001	N	METHOD	8330B	S4VEM
07-Jul-2016	FTBL-IS-057-070716MS	K1607636-001MS	MS	EPA 3050B	6020A	S2BVEM
07-Jul-2016	FTBL-IS-057-070716MSD	K1607636-001SD	MSD	EPA 3050B	6020A	S2BVEM
07-Jul-2016	FTBL-IS-057-070716MS	KQ1609059-01MS	MS	METHOD	6850	S2BVEM

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Jul-2016	FTBL-IS-057-070716MSD	KQ1609059-02SD	MSD	METHOD	6850	S2BVEM
07-Jul-2016	FTBL-IS-057-070716REP1	KWG1605985-4	REP	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-057-070716REP3	KWG1605985-5	REP	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-057-070716MS	KWG1605985-6	MS	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-057-070716MSD	KWG1605985-7	MSD	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-048-070716	K1607636-002	N	EPA 3050B	6020A	S4VEM
07-Jul-2016	FTBL-IS-048-070716	K1607636-002	N	METHOD	6850	S4VEM
07-Jul-2016	FTBL-IS-048-070716	K1607636-002	N	METHOD	8330B	S4VEM
07-Jul-2016	FTBL-IS-050-070716	K1607636-003	N	EPA 3050B	6020A	S2BVEM
07-Jul-2016	FTBL-IS-050-070716	K1607636-003	N	METHOD	6850	S2BVEM
07-Jul-2016	FTBL-IS-050-070716	K1607636-003	N	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-049-070716	K1607636-004	N	EPA 3050B	6020A	S2BVEM
07-Jul-2016	FTBL-IS-049-070716	K1607636-004	N	METHOD	6850	S2BVEM
07-Jul-2016	FTBL-IS-049-070716	K1607636-004	N	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-034-070716	K1607636-005	N	EPA 3050B	6020A	S2BVEM
07-Jul-2016	FTBL-IS-034-070716	K1607636-005	N	METHOD	6850	S2BVEM
07-Jul-2016	FTBL-IS-034-070716	K1607636-005	N	METHOD	8330B	S2BVEM
07-Jul-2016	FTBL-IS-056-070716	K1607636-006	N	EPA 3050B	6020A	S2BVEM
07-Jul-2016	FTBL-IS-056-070716	K1607636-006	N	METHOD	6850	S2BVEM
07-Jul-2016	FTBL-IS-056-070716	K1607636-006	N	METHOD	8330B	S2BVEM
07-Jul-2016	EB070716	K1607636-007	EB	CLFAA	6020A	S2BVEM
07-Jul-2016	EB070716	K1607636-007	EB	METHOD	8330B	S2BVEM

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607357

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-122-063016 6/30/2016 9:05:00 Collected: AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.155	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-126-063016 6/30/2016 9:00:00 Collected: AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	95.6	J	0.013	LOD	0.050	LOQ	mg/Kg	J	Ms, ProfJudg

Sample ID: FTBL-IS-136-063016 6/30/2016 1:15:00 Collected: PM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.140	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB063016 6/30/2016 12:00:00 Collected: AM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.007	J	0.020	LOD	0.020	LOQ	ug/L	U	Mb, Cb
LEAD	0.032	=	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.07	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-118-063016 6/30/2016 2:40:00 Collected: PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 1 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607357

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-119-063016 **Collected:** 6/30/2016 2:30:00 PM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.11	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-120-063016 **Collected:** 6/30/2016 1:20:00 PM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.12	JN	0.20	LOD	0.20	LOQ	mg/Kg	NJ	RI, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-122-063016 **Collected:** 6/30/2016 9:05:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-123-063016 **Collected:** 6/30/2016 11:00:00 AM **Analysis Type:** Initial **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-126-063016 **Collected:** 6/30/2016 9:00:00 AM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 2 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607357

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-127-063016 Collected: 6/30/2016 11:05:00 AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-136-063016 Collected: 6/30/2016 1:15:00 PM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.17	J	0.21	LOD	0.21	LOQ	mg/Kg	J	RI
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB063016 Collected: 6/30/2016 12:00:00 AM Analysis Type: Initial/TOT Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.093	JN	0.20	LOD	0.20	LOQ	ug/L	NJ	RI, ProfJudg
3-NITROTOLUENE	0.071	JN	0.10	LOD	0.10	LOQ	ug/L	U	Mb, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.059	JN	0.10	LOD	0.10	LOQ	ug/L	NJ	RI, ProfJudg
NITROGLYCERIN	1.2	N	1.0	LOD	1.0	LOQ	ug/L	NJ	ProfJudg

SDG: K1607397

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-117-07116 Collected: 7/1/2016 9:00:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.098	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 3 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607397

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-146-07116-A		7/1/2016 11:10:00 Collected: AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.134	J	0.025	LOD	0.049	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-146-07116-B		7/1/2016 1:25:00 PM Collected: 7/1/2016 1:25:00 PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.124	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-146-07116-C		7/1/2016 2:40:00 PM Collected: 7/1/2016 2:40:00 PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.124	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-149-07116-A		7/1/2016 11:00:00 Collected: AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.095	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-149-07116-B		7/1/2016 1:20:00 PM Collected: 7/1/2016 1:20:00 PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.094	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

Sample ID: FTBL-IS-149-07116-C		7/1/2016 2:30:00 PM Collected: 7/1/2016 2:30:00 PM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.095	J	0.025	LOD	0.050	LOQ	mg/Kg	U	Cb

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 4 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607397

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB070116

Collected: 7/1/2016 3:30:00 PM **Analysis Type:** Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.008	J	0.020	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.13	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-116-07116

Collected: 7/1/2016 9:05:00 AM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-117-07116

Collected: 7/1/2016 9:00:00 AM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

7/1/2016 11:10:00

Sample ID: FTBL-IS-146-07116-A

Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.075	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 5 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607397

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-146-07116-B

Collected: 7/1/2016 1:25:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-146-07116-C

Collected: 7/1/2016 2:40:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.076	JN	0.081	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

7/1/2016 11:00:00

Sample ID: FTBL-IS-149-07116-A

Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-149-07116-B

Collected: 7/1/2016 1:20:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-149-07116-C

Collected: 7/1/2016 2:30:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.16	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 6 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607397

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-149-07116-C

Collected: 7/1/2016 2:30:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB070116

Collected: 7/1/2016 3:30:00 PM **Analysis Type:** Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	2.9	N	1.0	LOD	1.0	LOQ	ug/L	NJ	ProfJudg

SDG: K1607483

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-143-070516

Collected: 7/5/2016 8:55:00 AM **Analysis Type:** Initial

Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.147	J	0.024	LOD	0.049	LOQ	mg/Kg	U	Cb

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-141-070516

Collected: 7/5/2016 1:05:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 7 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607483

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-141-070516

Collected: 7/5/2016 1:05:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-142-070516

Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-143-070516

Collected: 7/5/2016 8:55:00 AM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-144-070516

Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 8 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607483

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-144-070516 **Collected:** 7/5/2016 11:30:00

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-145-070516

Collected: 7/5/2016 2:40:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.024	U	0.024	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-147-070516

Collected: 7/5/2016 9:20:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 9 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607483

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-148-070516

Collected: 7/5/2016 2:00:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.0094	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB070516

Collected: 7/5/2016 3:30:00 PM **Analysis Type:** Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
3-NITROTOLUENE	0.11	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, Lcs, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.12	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, ProfJudg
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	2.1	N	1.0	LOD	1.0	LOQ	ug/L	NJ	Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs, Lcs
Tetryl	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 10 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607580

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB070616

Collected: 7/6/2016 3:30:00 PM Analysis Type: Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.06	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
NICKEL	0.08	J	0.05	LOD	0.20	LOQ	ug/L	J	RI
LEAD	0.014	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-063-070616

Collected: 7/6/2016 2:00:00 PM Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-068-070616

Collected: 7/6/2016 1:20:00 PM Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 11 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607580

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-068-070616

Collected: 7/6/2016 1:20:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
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Sample ID: FTBL-IS-079-070616

Collected: 7/6/2016 11:25:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-084-070616

Collected: 7/6/2016 9:05:00 AM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-085-070616

Collected: 7/6/2016 9:00:00 AM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 12 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607580

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-085-070616

Collected: 7/6/2016 9:00:00 AM Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.016	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.013	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.011	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

7/6/2016 11:15:00

Sample ID: FTBL-IS-086-070616

Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-107-070616

Collected: 7/6/2016 2:20:00 PM Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 13 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607580

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-107-070616

Collected: 7/6/2016 2:20:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.022	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB070616

Collected: 7/6/2016 3:30:00 PM **Analysis Type:** Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,6-DINITROTOLUENE	0.11	BJN	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Mb, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
3-NITROTOLUENE	0.10	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, Lcs, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.15	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, ProfJudg
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	2.3	N	1.0	LOD	1.0	LOQ	ug/L	NJ	Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.81	JN	1.0	LOD	1.0	LOQ	ug/L	NJ	RI, Lcs, Lcs, ProfJudg
Tetryl	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs

SDG: K1607636

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 14 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607636

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB070516 (2)

Collected: 7/5/2016 3:30:00 PM **Analysis Type:** Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.026	=	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

Sample ID: EB070716

Collected: 7/7/2016 3:30:00 PM **Analysis Type:** Initial/TOT

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	0.010	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb
NICKEL	0.15	J	0.05	LOD	0.20	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-034-070716

Collected: 7/7/2016 1:00:00 PM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-048-070716

Collected: 7/7/2016 9:10:00 AM **Analysis Type:** Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.024	U,i	0.024	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-049-070716

Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 15 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607636

Method Category: SVOA

Method: 8330B

Matrix: Soil

7/7/2016 11:10:00									
Sample ID: FTBL-IS-049-070716			Collected: AM		Analysis Type: Initial			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

7/7/2016 11:05:00									
Sample ID: FTBL-IS-050-070716			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.011	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
RDX	0.11	J	0.21	LOD	0.21	LOQ	mg/Kg	J	RI
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

7/7/2016 1:15:00 PM									
Sample ID: FTBL-IS-056-070716			Collected: 7/7/2016 1:15:00 PM		Analysis Type: Initial			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

7/7/2016 9:00:00 AM									
Sample ID: FTBL-IS-057-070716			Collected: 7/7/2016 9:00:00 AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.13	=	0.021	LOD	0.041	LOQ	mg/Kg	J	Ms, Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 16 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607636

Method Category: SVOA

Method: 8330B

Matrix: Water

Sample ID: EB070716

Collected: 7/7/2016 3:30:00 PM Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
3-NITROTOLUENE	0.13	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, Lcs, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.18	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, ProfJudg
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	2.0	N	1.0	LOD	1.0	LOQ	ug/L	NJ	Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs, Lcs
Tetryl	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 17 of 18

Data Qualifier Summary

Lab Reporting Batch ID: K1607397, K1607357, K1607483,

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev,
K1607357_SEDD2A_rev, K1607483_SEDD2A_rev,
K1607580_SEDD2A_rev, K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Lt	Laboratory Triplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:39:03 PM

ADR version 1.9.0.325

Page 18 of 18

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1607357

Method Blank Outlier Report

Lab Reporting Batch ID: K1607357

Laboratory: ALS_K

EDD Filename: K1607357_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608663-01	8/5/2016 8:24:00 PM	LEAD	0.012 mg/Kg	FTBL-IS-118-063016 FTBL-IS-119-063016 FTBL-IS-120-063016 FTBL-IS-122-063016 FTBL-IS-123-063016 FTBL-IS-123-063016RE FTBL-IS-126-063016 FTBL-IS-127-063016 FTBL-IS-136-063016 FTBL-IS-136-063016RE

Method: 6020A

Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB063016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB063016(Initial/TOT)	BERYLLIUM	0.007 ug/L	0.007U ug/L
EB063016(Initial/TOT)	LEAD	0.032 ug/L	0.032U ug/L

Method: 8330B

Matrix: Water

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605518-3	7/19/2016 6:48:00 PM	3-NITROTOLUENE	0.035 ug/L	EB063016

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB063016(Initial/TOT)	3-NITROTOLUENE	0.071 ug/L	0.071U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:25:45 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607357

Laboratory: ALS_K

EDD Filename: K1607357_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-126-063016MS (Dry) FTBL-IS-126-063016MSD (Dry) (FTBL-IS-126-063016)	ANTIMONY LEAD	46 32	41 32	72.00-124.00 84.00-118.00	- -	ANTIMONY LEAD	Sb, No Qual, Post Spike = 104% Pb, J (all detects)

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-126-063016MSD (FTBL-IS-126-063016)	2,6-DINITROTOLUENE 3-NITROTOLUENE	- -	- -	79.00-117.00 67.00-129.00	22 (20.00) 21 (20.00)	2,6-DINITROTOLUENE 3-NITROTOLUENE	J(all detects)
FTBL-IS-126-063016MS (FTBL-IS-126-063016)	3,5-Dinitroaniline	80	-	86.00-118.00	-	3,5-Dinitroaniline	J(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607357

Laboratory: ALS_K

EDD Filename: K1607357_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605844-2 KWG1605844-7 (FTBL-IS-118-063016 FTBL-IS-119-063016 FTBL-IS-120-063016 FTBL-IS-122-063016 FTBL-IS-123-063016 FTBL-IS-126-063016 FTBL-IS-127-063016 FTBL-IS-136-063016)	3,5-Dinitroaniline Tetryl	71 59	- -	86.00-118.00 68.00-135.00	- -	3,5-Dinitroaniline Tetryl	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:25:50 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607357

Laboratory: ALS_K

EDD Filename: K1607357_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-119-063016	NITROGLYCERIN	JN	0.11	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-120-063016	NITROGLYCERIN	JN	0.12	0.20	LOQ	mg/Kg	J (all detects)
FTBL-IS-136-063016	NITROGLYCERIN	J	0.17	0.21	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB063016	BERYLLIUM	J	0.007	0.020	LOQ	ug/L	J (all detects)
	NICKEL	J	0.07	0.20	LOQ	ug/L	

Method: 8330B

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB063016	2,6-DINITROTOLUENE	JN	0.093	0.20	LOQ	ug/L	J (all detects)
	3-NITROTOLUENE	JN	0.071	0.10	LOQ	ug/L	
	4-Amino-2,6-Dinitrotoluene	JN	0.059	0.10	LOQ	ug/L	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:25:52 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36953A4a
SDG #: K1607357
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/30/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	6/30/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = SB out; PS in = NR
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	SW	SER = (-)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-126-063016	K1607357-001	Soil	06/30/16
2	FTBL-IS-122-063016	K1607357-002	Soil	06/30/16
3	FTBL-IS-127-063016	K1607357-003	Soil	06/30/16
4	FTBL-IS-123-063016	K1607357-004	Soil	06/30/16
5	FTBL-IS-136-063016	K1607357-005	Soil	06/30/16
6	FTBL-IS-120-063016	K1607357-006	Soil	06/30/16
7	FTBL-IS-119-063016	K1607357-007	Soil	06/30/16
8	FTBL-IS-118-063016	K1607357-008	Soil	06/30/16
9	EB063016	K1607357-009	Water	06/30/16
10	FTBL-IS-126-063016MS	K1607357-001MS	Soil	06/30/16
11	FTBL-IS-126-063016MSD	K1607357-001MSD	Soil	06/30/16
12				
13				

Notes: _____

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1, 3-8 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	5									
Sb			0.062	0.155	0.140									

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	2									
Sb			0.078	0.195	0.155									

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	9									
Sb			0.020	0.1										
Be			0.009	0.045	0.007									
Pb			0.008	0.04	0.032									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

METHOD: Trace Metals (EPA SW 846 Method 6010C/6020A/7471B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

✓ N N/A If analyte concentrations were > 50X the MDL (ICP), or >100X the MDL (ICP/MS), was a serial dilution analyzed?

Y/N N/A Were ICP serial dilution percent differences (%D) $\leq 10\%$?

Y ~~N~~ N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

[illegible]

Comments: _____

LDC #: 36953A40
SDG #: K1607357
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/5/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	SN	EB = 9 (>5x)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /TRP	N	Lab TM = 1/13/13 : %RSD = 44 (<20)
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-126-063016	K1607357-001	Soil	06/30/16
2	FTBL-IS-122-063016	K1607357-002	Soil	06/30/16
3	FTBL-IS-127-063016	K1607357-003	Soil	06/30/16
4	FTBL-IS-123-063016	K1607357-004	Soil	06/30/16
5	FTBL-IS-136-063016	K1607357-005	Soil	06/30/16
6	FTBL-IS-120-063016	K1607357-006	Soil	06/30/16
7	FTBL-IS-119-063016	K1607357-007	Soil	06/30/16
8	FTBL-IS-118-063016	K1607357-008	Soil	06/30/16
9	EB063016	K1607357-009	Water	06/30/16
10	FTBL-IS-126-063016MS	K1607357-001MS	Soil	06/30/16
11	FTBL-IS-126-063016MSD	K1607357-001MSD	Soil	06/30/16
12	FTBL-IS-126-063016DUP	K1607357-001DUP	Soil	06/30/16
13	FTBL-IS-126-063016TRP	K1607357-001TRP	Soil	06/30/16
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L.. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36953A40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: of

Reviewer: CL

2nd Reviewer: h

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y/N/N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

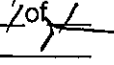

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
---	---	-----	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

LDC #: 36953A87 **VALIDATION COMPLETENESS WORKSHEET**
SDG #: K1607357 ADR
Laboratory: ALS Environmental

Date: 8/31/16
Page: 1 of 1
Reviewer: 
2nd Reviewer: 

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	
IV.	Continuing calibration	A	
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-126-063016	K1607357-001	Soil	06/30/16
2	FTBL-IS-122-063016	K1607357-002	Soil	06/30/16
3	FTBL-IS-127-063016	K1607357-003	Soil	06/30/16
4	FTBL-IS-123-063016	K1607357-004	Soil	06/30/16
5	FTBL-IS-136-063016	K1607357-005	Soil	06/30/16
6	FTBL-IS-120-063016	K1607357-006	Soil	06/30/16
7	FTBL-IS-119-063016	K1607357-007	Soil	06/30/16
8	FTBL-IS-118-063016	K1607357-008	Soil	06/30/16
9				
10				

Notes:

Quality Control Outlier Reports

K1607397

Method Blank Outlier Report

Lab Reporting Batch ID: K1607397

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608663-01	8/5/2016 8:24:00 PM	LEAD	0.012 mg/Kg	FTBL-IS-116-07116 FTBL-IS-117-07116 FTBL-IS-146-07116-A FTBL-IS-146-07116-B FTBL-IS-146-07116-C FTBL-IS-149-07116-A FTBL-IS-149-07116-B FTBL-IS-149-07116-C

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB070116

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB070116(Initial/TOT)	BERYLLIUM	0.008 ug/L	0.008U ug/L

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605518-3	7/19/2016 6:48:00 PM	3-NITROTOLUENE	0.035 ug/L	EB070116

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/15/2016 3:46:52 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607397

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-117-07116MS (FTBL-IS-117-07116)	1,3,5-TRINITROBENZENE	78	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
	2,6-DINITROTOLUENE	70	-	79.00-117.00	-	2,6-DINITROTOLUENE	
	3,5-Dinitroaniline	74	-	86.00-118.00	-	3,5-Dinitroaniline	
	HMX	64	-	74.00-124.00	-	HMX	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/15/2016 3:46:54 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607397

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605894-3 KWG1605894-8 (FTBL-IS-116-07116 FTBL-IS-117-07116 FTBL-IS-146-07116-A FTBL-IS-146-07116-B FTBL-IS-146-07116-C FTBL-IS-149-07116-A FTBL-IS-149-07116-B FTBL-IS-149-07116-C)	2,6-DINITROTOLUENE 3,5-Dinitroaniline Tetryl	77 77 59	- - -	79.00-117.00 86.00-118.00 68.00-135.00	- - -	2,6-DINITROTOLUENE 3,5-Dinitroaniline Tetryl	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/15/2016 3:46:56 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607397

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-146-07116-A	NITROGLYCERIN	JN	0.075	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-146-07116-C	2,4-DINITROTOLUENE	JN	0.076	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-149-07116-C	Pentaerythritol Tetranitrate (PETN)	JN	0.16	0.21	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB070116	BERYLLIUM	J	0.008	0.020	LOQ	ug/L	J (all detects)
	NICKEL	J	0.13	0.20	LOQ	ug/L	

Field Triplicate RSD Report

Lab Reporting Batch ID: K1607397

Laboratory: ALS_K

EDD Filename: K1607397_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-149-07116-A	FTBL- IS-149-07116-B	FTBL- IS-149-07116-C			
ANTIMONY	0.095	0.094	0.095	0.61	20.00	No Qualifiers Applied
ARSENIC	4.44	4.22	4.15	3.54	20.00	
BERYLLIUM	1.22	1.24	1.23	0.81	20.00	
COPPER	10.8	10.8	10.6	1.08	20.00	
LEAD	16.7	15.9	16.2	2.48	20.00	
NICKEL	7.76	7.67	7.19	4.06	20.00	
ZINC	50.6	49.2	50.3	1.47	20.00	

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-146-07116-A	FTBL- IS-146-07116-B	FTBL- IS-146-07116-C			
ANTIMONY	0.134	0.124	0.124	4.53	20.00	No Qualifiers Applied
ARSENIC	4.75	4.65	4.90	2.64	20.00	
BERYLLIUM	1.36	1.26	1.20	6.35	20.00	
COPPER	14.9	13.8	13.0	6.86	20.00	
LEAD	23.9	21.9	20.4	7.96	20.00	
NICKEL	8.51	9.06	8.25	4.81	20.00	
ZINC	51.8	48.1	45.9	6.14	20.00	

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-149-07116-A	FTBL- IS-149-07116-B	FTBL- IS-149-07116-C			
Pentaerythritol Tetranitrate (PETN)	0.21 U	0.21 U	0.16	NC	20.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-146-07116-A	FTBL- IS-146-07116-B	FTBL- IS-146-07116-C			
2,4-DINITROTOLUENE	0.32	0.081 U	0.076	123.23	20.00*	No Qualifiers Applied
NITROGLYCERIN	0.075	0.21 U	0.21 U	NC	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/19/2016 1:38:04 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36953B4a
SDG #: K1607397
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/30/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: Jan

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-117-07116	K1607397-001	Soil	07/01/16
2	FTBL-IS-116-07116	K1607397-002	Soil	07/01/16
3	FTBL-IS-149-07116-A	K1607397-003	Soil	07/01/16
4	FTBL-IS-149-07116-B	K1607397-004	Soil	07/01/16
5	FTBL-IS-149-07116-C	K1607397-005	Soil	07/01/16
6	FTBL-IS-146-07116-A	K1607397-006	Soil	07/01/16
7	FTBL-IS-146-07116-B	K1607397-007	Soil	07/01/16
8	FTBL-IS-146-07116-C	K1607397-008	Soil	07/01/16
9	EB070116	K1607397-009	Water	07/01/16
10				
11				
12				
13				

Notes:

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1, 3-8 (5X)

					Sample Identification								
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	1	3	4	5	6	7	8		
Sb			0.062	0.155	0.098	0.095	0.094	0.095	0.134	0.124	0.124		

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2 (5X)

					Sample Identification								
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.								
Sb			0.078	0.195									

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification								
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	9								
Sb			0.020	0.1									
Be			0.009	0.045	0.008								
Pb			0.008	0.04									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36953B40
 SDG #: K1607397
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/31/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	ZB = 9 (25x)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /TR	N/A	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	IN	TP = 3+4+5. 6+7+8
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB = Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-117-07116	K1607397-001	Soil	07/01/16
2	FTBL-IS-116-07116	K1607397-002	Soil	07/01/16
3	FTBL-IS-149-07116-A	K1607397-003	Soil	07/01/16
4	FTBL-IS-149-07116-B	K1607397-004	Soil	07/01/16
5	FTBL-IS-149-07116-C	K1607397-005	Soil	07/01/16
6	FTBL-IS-146-07116-A	K1607397-006	Soil	07/01/16
7	FTBL-IS-146-07116-B	K1607397-007	Soil	07/01/16
8	FTBL-IS-146-07116-C	K1607397-008	Soil	07/01/16
9	EB070116	K1607397-009	Water	07/01/16
10	FTBL-IS-117-07116MS	K1607397-001MS	Soil	07/01/16
11	FTBL-IS-117-07116MSD	K1607397-001MSD	Soil	07/01/16
12	FTBL-IS-117-07116DUP	K1607397-001DUP	Soil	07/01/16
13	FTBL-IS-117-07116TRP	K1607397-001TRP	Soil	07/01/16
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L.. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Pentacerythritol tetranitrate		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes:

LDC#: 36953B40**VALIDATION FINDINGS WORKSHEET**
Field TriplicatesPage: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]**METHOD:** Explosives (EPA SW846 Method 8330B)Y N NA

Were lab triplicates sets identified in this SDG?

Y N NA

Were target analytes detected in the field triplicate sets?

Compound	Concentration (mg/kg)			RSD ($\leq 20\%$)	Qual
	3	4	5		
P	0.21U	0.21U	0.16	15	NQ

Compound	Concentration (mg/kg)			RSD ($\leq 20\%$)	Qual
	6	7	8		
J	0.32	0.081U	0.076	88	NQ
O	0.075	0.21U	0.21U	47	NQ

NQ = One or two results were $< 5x$ the Limit of Quantitation (LOQ), therefore no data were qualified.

V:\FIELD REPLICATES\36953B40_Arcadis.wpd

LDC #: 36953BAD

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: Q

2nd Reviewer:

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level ~~IV~~D Only

Y ~~N~~ ~~N/A~~ Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

~~Y~~ ~~N~~ ~~N/A~~ Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
---	---	-----	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1607483

Method Blank Outlier Report

Lab Reporting Batch ID: K1607483

Laboratory: ALS_K

EDD Filename: K1607483_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609094-01	8/17/2016 6:53:00 PM	COPPER LEAD NICKEL ZINC	0.022 mg/Kg 0.015 mg/Kg 0.04 mg/Kg 0.13 mg/Kg	FTBL-IS-141-070516 FTBL-IS-142-070516 FTBL-IS-143-070516 FTBL-IS-144-070516 FTBL-IS-145-070516 FTBL-IS-147-070516 FTBL-IS-148-070516

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605948-3	8/2/2016 7:29:00 PM	1,3,5-TRINITROBENZENE	0.030 mg/Kg	FTBL-IS-141-070516 FTBL-IS-142-070516 FTBL-IS-143-070516 FTBL-IS-144-070516 FTBL-IS-145-070516 FTBL-IS-147-070516 FTBL-IS-148-070516

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605670-3	7/20/2016 8:42:00 AM	1,3-DINITROBENZENE 2,6-DINITROTOLUENE	0.10 ug/L 0.12 ug/L	EB070516

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:26:24 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607483

Laboratory: ALS_K

EDD Filename: K1607483_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-143-070516MS (Dry) FTBL-IS-143-070516MSD (Dry) (FTBL-IS-143-070516)	ANTIMONY	38	36	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 117%

Method: 8330B
Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-143-070516MS FTBL-IS-143-070516MSD (FTBL-IS-143-070516)	2,6-DINITROTOLUENE 3,5-Dinitroaniline	72 83	76 85	79.00-117.00 86.00-118.00	- -	2,6-DINITROTOLUENE 3,5-Dinitroaniline	J(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607483

Laboratory: ALS_K

EDD Filename: K1607483_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605948-4	1,3,5-TRINITROBENZENE	74	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J(all detects) UJ(all non-detects)
KWG1605948-7	2,4,6-TRINITROTOLUENE	70	-	71.00-120.00	-	2,4,6-TRINITROTOLUENE	
(FTBL-IS-141-070516	2,6-DINITROTOLUENE	67	-	79.00-117.00	-	2,6-DINITROTOLUENE	
FTBL-IS-142-070516	3,5-Dinitroaniline	63	-	86.00-118.00	-	3,5-Dinitroaniline	
FTBL-IS-143-070516	4-Amino-2,6-Dinitrotoluene	60	-	64.00-127.00	-	4-Amino-2,6-Dinitrotoluene	
FTBL-IS-144-070516	HMX	65	-	74.00-124.00	-	HMX	
FTBL-IS-145-070516	NITROGLYCERIN	65	-	73.00-124.00	-	NITROGLYCERIN	
FTBL-IS-147-070516	Tetryl	48	-	68.00-135.00	-	Tetryl	
FTBL-IS-148-070516)							

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605670-1	1,3,5-TRINITROBENZENE	70	-	73.00-125.00	21 (20.00)	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
KWG1605670-2	1,3-DINITROBENZENE	71	-	78.00-120.00	-	1,3-DINITROBENZENE	
(EB070516)	2,4,6-TRINITROTOLUENE	69	-	71.00-123.00	22 (20.00)	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	73	-	78.00-120.00	22 (20.00)	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	66	-	77.00-127.00	-	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	72	-	79.00-120.00	21 (20.00)	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	66	-	70.00-127.00	21 (20.00)	2-NITROTOLUENE	
	3,5-Dinitroaniline	69	-	71.00-117.00	21 (20.00)	3,5-Dinitroaniline	
	3-NITROTOLUENE	65	-	73.00-125.00	23 (20.00)	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	68	-	76.00-125.00	22 (20.00)	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	66	-	71.00-127.00	-	4-NITROTOLUENE	
	HMX	62	-	65.00-135.00	-	HMX	
	NITROGLYCERIN	-	-	74.00-127.00	21 (20.00)	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	67	-	73.00-127.00	23 (20.00)	Pentaerythritol Tetranitrate (PETN)	
	Tetryl	-	-	64.00-128.00	22 (20.00)	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:26:29 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607483

Laboratory: ALS_K

EDD Filename: K1607483_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-148-070516	HMX	JN	0.0094	0.041	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:26:30 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36953C4a
SDG #: K1607483
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/30/16
Page: 1 of 1
Reviewer: JSD
2nd Reviewer: Jm

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	EB = EB070516 (SDG: K1607636)
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D = SB out; PS In = NQ
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	SER = (1)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

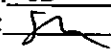
	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-143-070516	K1607483-001	Soil	07/05/16
2	FTBL-IS-147-070516	K1607483-002	Soil	07/05/16
3	FTBL-IS-144-070516	K1607483-003	Soil	07/05/16
4	FTBL-IS-142-070516	K1607483-004	Soil	07/05/16
5	FTBL-IS-141-070516	K1607483-005	Soil	07/05/16
6	FTBL-IS-148-070516	K1607483-006	Soil	07/05/16
7	FTBL-IS-145-070516	K1607483-007	Soil	07/05/16
8	FTBL-IS-143-070516MS	K1607483-001MS	Soil	07/05/16
9	FTBL-IS-143-070516MSD	K1607483-001MSD	Soil	07/05/16
10				
11				
12				
13				

Notes:

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

Soil preparation factor applied: 100X

2nd Reviewer: 

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1 (5X)

					Sample/identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	1									
Sb			0.081	0.2025	0.147									

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2-7 (5X)

					Sample/identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Sb			0.043	0.1075										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36953C40
SDG #: K1607483
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/3/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	EB = 8 (NO. in samples)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /TR	N/A	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SW	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-143-070516	K1607483-001	Soil	07/05/16
2	FTBL-IS-147-070516	K1607483-002	Soil	07/05/16
3	FTBL-IS-144-070516	K1607483-003	Soil	07/05/16
4	FTBL-IS-142-070516	K1607483-004	Soil	07/05/16
5	FTBL-IS-141-070516	K1607483-005	Soil	07/05/16
6	FTBL-IS-148-070516	K1607483-006	Soil	07/05/16
7	FTBL-IS-145-070516	K1607483-007	Soil	07/05/16
8	EB070516	K1607483-008	Water	07/05/16
9	FTBL-IS-143-070516MS	K1607483-001MS	Soil	07/05/16
10	FTBL-IS-143-070516MSD	K1607483-001MSD	Soil	07/05/16
11	FTBL-IS-143-070516DUP	K1607483-001DUP	Soil	07/05/16
12	FTBL-IS-143-070516TRP	K1607483-001TRP	Soil	07/05/16
13				
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 35953040

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer:

2nd Reviewer: 

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y ~~N~~/N/A) Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y/N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors <40%?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1607580

Method Blank Outlier Report

Lab Reporting Batch ID: K1607580

Laboratory: ALS_K

EDD Filename: K1607580_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609094-01	8/17/2016 6:53:00 PM	COPPER LEAD NICKEL ZINC	0.022 mg/Kg 0.015 mg/Kg 0.04 mg/Kg 0.13 mg/Kg	FTBL-IS-063-070616 FTBL-IS-068-070616 FTBL-IS-079-070616 FTBL-IS-084-070616 FTBL-IS-085-070616 FTBL-IS-086-070616 FTBL-IS-107-070616

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB070616

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB070616(Initial/TOT)	LEAD	0.014 ug/L	0.014U ug/L

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605670-3	7/20/2016 8:42:00 AM	1,3-DINITROBENZENE 2,6-DINITROTOLUENE	0.10 ug/L 0.12 ug/L	EB070616

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB070616(Initial/TOT)	2,6-DINITROTOLUENE	0.11 ug/L	0.11U ug/L

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:26:45 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607580

Laboratory: ALS_K

EDD Filename: K1607580_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605959-2 (FTBL-IS-063-070616 FTBL-IS-068-070616 FTBL-IS-079-070616 FTBL-IS-084-070616 FTBL-IS-085-070616 FTBL-IS-086-070616 FTBL-IS-107-070616)	Tetryl	5	-	68.00-135.00	-	Tetryl	J(all detects) R(all non-detects)
KWG1605959-7 KWG1605959-7 (FTBL-IS-063-070616 FTBL-IS-068-070616 FTBL-IS-079-070616 FTBL-IS-084-070616 FTBL-IS-085-070616 FTBL-IS-086-070616 FTBL-IS-107-070616)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene HMX NITROGLYCERIN	41 69 61 66 74 62 70 57	- - - - - - - -	80.00-116.00 73.00-119.00 71.00-120.00 79.00-117.00 86.00-118.00 64.00-127.00 74.00-124.00 73.00-124.00	- - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene HMX NITROGLYCERIN	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605670-1 KWG1605670-2 (EB070616)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	70 71 69 73 66 72 66 69 65 68 66 62 - 67 -	- - - - - - - - - - - - - - -	73.00-125.00 78.00-120.00 71.00-123.00 78.00-120.00 77.00-127.00 79.00-120.00 70.00-127.00 71.00-117.00 73.00-125.00 76.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00 73.00-127.00 64.00-128.00	21 (20.00) - 22 (20.00) 22 (20.00) - 21 (20.00) 21 (20.00) 21 (20.00) 23 (20.00) 22 (20.00) - - 21 (20.00) 23 (20.00) 22 (20.00)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:26:47 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607580

Laboratory: ALS_K

EDD Filename: K1607580_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-085-070616	2,6-DINITROTOLUENE	JN	0.016	0.041	LOQ	mg/Kg	J (all detects)
	4-Amino-2,6-Dinitrotoluene	JN	0.013	0.081	LOQ	mg/Kg	
	NITROBENZENE	JN	0.011	0.081	LOQ	mg/Kg	
FTBL-IS-107-070616	NITROBENZENE	JN	0.022	0.081	LOQ	mg/Kg	J (all detects)

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB070616	COPPER	J	0.06	0.10	LOQ	ug/L	J (all detects)
	LEAD	J	0.014	0.020	LOQ	ug/L	
	NICKEL	J	0.08	0.20	LOQ	ug/L	

Method: 8330B

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB070616	2,6-DINITROTOLUENE	BJN	0.11	0.20	LOQ	ug/L	J (all detects)
	Pentaerythritol Tetranitrate (PETN)	JN	0.81	1.0	LOQ	ug/L	

LDC #: 36953D4a
 SDG #: K1607580
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/30/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-085-070616	K1607580-001	Soil	07/06/16
2	FTBL-IS-084-070616	K1607580-002	Soil	07/06/16
3	FTBL-IS-086-070616	K1607580-003	Soil	07/06/16
4	FTBL-IS-079-070616	K1607580-004	Soil	07/06/16
5	FTBL-IS-068-070616	K1607580-005	Soil	07/06/16
6	FTBL-IS-063-070616	K1607580-006	Soil	07/06/16
7	FTBL-IS-107-070616	K1607580-007	Soil	07/06/16
8	EB070616	K1607580-008	Water	07/06/16
9				
10				
11				
12				
13				

Notes:

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All Soils (5X)

					Sample Identification									
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	No Qual.									
Sb			0.043	0.1075										

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	8									
Sb			0.020	0.1										
Be			0.009	0.045										
Pb			0.008	0.04	0.014									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36953D40
 SDG #: K1607580
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/31/16
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: SM

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	EB=8 (>5x)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /TRP	N/A	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SN	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-085-070616	K1607580-001	Soil	07/06/16
2	FTBL-IS-084-070616	K1607580-002	Soil	07/06/16
3	FTBL-IS-086-070616	K1607580-003	Soil	07/06/16
4	FTBL-IS-079-070616	K1607580-004	Soil	07/06/16
5	FTBL-IS-068-070616	K1607580-005	Soil	07/06/16
6	FTBL-IS-063-070616	K1607580-006	Soil	07/06/16
7	FTBL-IS-107-070616	K1607580-007	Soil	07/06/16
8	EB070616	K1607580-008	Water	07/06/16
9	FTBL-IS-085-070616MS	K1607580-001MS	Soil	07/06/16
10	FTBL-IS-085-070616MSD	K1607580-001MSD	Soil	07/06/16
11	FTBL-IS-085-070616DUP	K1607580-001DUP	Soil	07/06/16
12	FTBL-IS-085-070616TRP	K1607580-001TRP	Soil	07/06/16
13				
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Pentaerythritol Tetranitrate		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36953040

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer:

2nd Reviewer: Sm

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors <40%?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1607636

Method Blank Outlier Report

Lab Reporting Batch ID: K1607636

Laboratory: ALS_K

EDD Filename: K1607636_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609083-01	8/17/2016 8:55:00 PM	LEAD	0.017 mg/Kg	FTBL-IS-034-070716 FTBL-IS-048-070716 FTBL-IS-049-070716 FTBL-IS-050-070716 FTBL-IS-056-070716 FTBL-IS-057-070716

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB070516 (2) EB070716

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB070516 (2)(Initial/TOT)	LEAD	0.026 ug/L	0.026U ug/L
EB070716(Initial/TOT)	LEAD	0.010 ug/L	0.010U ug/L

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605670-3	7/20/2016 8:42:00 AM	1,3-DINITROBENZENE 2,6-DINITROTOLUENE	0.10 ug/L 0.12 ug/L	EB070716

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:27:10 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607636

Laboratory: ALS_K

EDD Filename: K1607636_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6850

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-057-070716MSD (FTBL-IS-057-070716)	PERCHLORATE	-	124	84.00-121.00	-	PERCHLORATE	J (all detects)

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-057-070716MS (Dry) FTBL-IS-057-070716MSD (Dry) (FTBL-IS-057-070716)	ANTIMONY	38	36	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 110%

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-057-070716MS	2,6-DINITROTOLUENE	78	-	79.00-117.00	-	2,6-DINITROTOLUENE	J(all detects)
FTBL-IS-057-070716MSD	3,5-Dinitroaniline	80	81	86.00-118.00	-	3,5-Dinitroaniline	UJ(all non-detects)
(FTBL-IS-057-070716)	HMX	73	-	74.00-124.00	-	HMX	

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607636

Laboratory: ALS_K

EDD Filename: K1607636_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605985-3	2,6-DINITROTOLUENE	78	-	79.00-117.00	-	2,6-DINITROTOLUENE	J(all detects) UJ(all non-detects)
KWG1605985-8	3,5-Dinitroaniline	75	-	86.00-118.00	-	3,5-Dinitroaniline	
(FTBL-IS-034-070716	HMX	72	-	74.00-124.00	-	HMX	
FTBL-IS-048-070716	Tetryl	56	-	68.00-135.00	-	Tetryl	
FTBL-IS-049-070716							
FTBL-IS-050-070716							
FTBL-IS-056-070716							
FTBL-IS-057-070716)							

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605670-1	1,3,5-TRINITROBENZENE	70	-	73.00-125.00	21 (20.00)	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
KWG1605670-2	1,3-DINITROBENZENE	71	-	78.00-120.00	-	1,3-DINITROBENZENE	
(EB070716)	2,4,6-TRINITROTOLUENE	69	-	71.00-123.00	22 (20.00)	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	73	-	78.00-120.00	22 (20.00)	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	66	-	77.00-127.00	-	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	72	-	79.00-120.00	21 (20.00)	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	66	-	70.00-127.00	21 (20.00)	2-NITROTOLUENE	
	3,5-Dinitroaniline	69	-	71.00-117.00	21 (20.00)	3,5-Dinitroaniline	
	3-NITROTOLUENE	65	-	73.00-125.00	23 (20.00)	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	68	-	76.00-125.00	22 (20.00)	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	66	-	71.00-127.00	-	4-NITROTOLUENE	
	HMX	62	-	65.00-135.00	-	HMX	
	NITROGLYCERIN	-	-	74.00-127.00	21 (20.00)	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	67	-	73.00-127.00	23 (20.00)	Pentaerythritol Tetranitrate (PETN)	
	Tetryl	-	-	64.00-128.00	22 (20.00)	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:27:14 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607636

Laboratory: ALS_K

EDD Filename: K1607636_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-050-070716	HMX	JN	0.011	0.041	LOQ	mg/Kg	J (all detects)
	RDX	J	0.11	0.21	LOQ	mg/Kg	

Method: 6020A

Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB070716	LEAD	J	0.010	0.020	LOQ	ug/L	J (all detects)
	NICKEL	J	0.15	0.20	LOQ	ug/L	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 7:27:16 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36953E4a
SDG #: K1607636
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR# 30

Date: 8/20/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	AN	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MS/D = SB = Out, PS = In = NR
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	SEP = ()
X.	Laboratory control samples	N	Not reviewed for ADR validation.
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

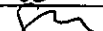
	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-057-070716**	K1607636-001**	Soil	07/07/16
2	FTBL-IS-048-070716**	K1607636-002**	Soil	07/07/16
3	FTBL-IS-050-070716	K1607636-003	Soil	07/07/16
4	FTBL-IS-049-070716	K1607636-004	Soil	07/07/16
5	FTBL-IS-034-070716	K1607636-005	Soil	07/07/16
6	FTBL-IS-056-070716	K1607636-006	Soil	07/07/16
7	EB070716	K1607636-007	Water	07/07/16
8	EB070516	K1607636-008	Water	07/05/16
9	FTBL-IS-057-070716MS	K1607636-001MS	Soil	07/07/16
10	FTBL-IS-057-070716MSD	K1607636-001MSD	Soil	07/07/16
11				
12				
13				

Notes:

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

Soil preparation factor applied: 100X

2nd Reviewer: 

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1, 3-6 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Sb			0.046	0.115										

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Sb			0.045	0.1125										

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	7	8								
Sb			0.020	0.1										
Be			0.009	0.045										
Pb			0.008	0.04	0.010	0.026								

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36953E40
SDG #: K1607636
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/31/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A, A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	W	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinstate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-057-070716**	K1607636-001**	Soil	07/07/16
2	FTBL-IS-048-070716**	K1607636-002**	Soil	07/07/16
3	FTBL-IS-050-070716	K1607636-003	Soil	07/07/16
4	FTBL-IS-049-070716	K1607636-004	Soil	07/07/16
5	FTBL-IS-034-070716	K1607636-005	Soil	07/07/16
6	FTBL-IS-056-070716	K1607636-006	Soil	07/07/16
7	EB070716	K1607636-007	Water	07/07/16
8	FTBL-IS-057-070716MS	K1607636-001MS	Soil	07/07/16
9	FTBL-IS-057-070716MSD	K1607636-001MSD	Soil	07/07/16
10	FTBL-IS-057-070716DUP	K1607636-001DUP	Soil	07/07/16
11	FTBL-IS-057-070716TRP	K1607636-001TRP	Soil	07/07/16
12				
13				
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36953240

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: Q

2nd Reviewer: SW

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level ~~IV~~D Only

Y N N/A) Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y, N (N/A) Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
---	---	-----	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

VALIDATION COMPLETENESS WORKSHEET

SDG #: K1607636

ADR/

Laboratory: ALS Environmental

Date: 8/27/16

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	★	
II.	GC/MS Instrument performance check	★	
III.	Initial calibration/ICV	★ ★	
IV.	Continuing calibration	★	
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-057-070716**	K1607636-001**	Soil	07/07/16
2	FTBL-IS-048-070716**	K1607636-002**	Soil	07/07/16
3	FTBL-IS-050-070716	K1607636-003	Soil	07/07/16
4	FTBL-IS-049-070716	K1607636-004	Soil	07/07/16
5	FTBL-IS-034-070716	K1607636-005	Soil	07/07/16
6	FTBL-IS-056-070716	K1607636-006	Soil	07/07/16
7	FTBL-IS-057-070716MS	K1607636-001MS	Soil	07/07/16
8	FTBL-IS-057-070716MSD	K1607636-001MSD	Soil	07/07/16
9				
10				

Notes:

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 12, 2016

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1607636

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-057-070716	K1607636-001	Soil	07/07/16
FTBL-IS-048-070716	K1607636-002	Soil	07/07/16
FTBL-IS-050-070716	K1607636-003	Soil	07/07/16
FTBL-IS-049-070716	K1607636-004	Soil	07/07/16
FTBL-IS-034-070716	K1607636-005	Soil	07/07/16
EB070716	K1607636-007	Water	07/07/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Arsenic, Beryllium, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Antimony	0.046 ug/L	FTBL-IS-057-070716 FTBL-IS-050-070716 FTBL-IS-049-070716 FTBL-IS-034-070716
ICB/CCB	Antimony	0.045 ug/L	FTBL-IS-048-070716
PB (prep blank)	Lead	0.017 mg/Kg	All soil samples in SDG K1607636
PB (prep blank)	Beryllium Lead	0.008 ug/L 0.008 ug/L	All water samples in SDG K1607636
ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607636

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
EB070716	Lead	0.010 ug/L	0.010U ug/L

VI. Field Blanks

Sample EB070716 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
EB070716	07/07/16	Copper Lead Nickel Zinc	0.11 ug/L 0.010 ug/L 0.15 ug/L 0.5 ug/L	All soil samples in SDG K1607636

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. No data were qualified for Antimony percent recoveries (%R) outside QC limits for FTBL-IS-057-070716MS/MSD since the post-digestion spike %R was within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to laboratory blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1607636

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1607636

Sample	Analyte	Modified Final Concentration	A or P
EB070716	Lead	0.010U ug/L	A

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1607636

No Sample Data Qualified in this SDG

LDC #: 36953E4a
SDG #: K1607636
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 8/30/16
Page: 1 of 1
Reviewer: JD
2nd Reviewer: 2

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	SW	Not reviewed for ADR validation. EB = 7
VII.	Matrix Spike/Matrix Spike Duplicates	SW	Not reviewed for ADR validation.
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-057-070716**	K1607636-001**	Soil	07/07/16
2	FTBL-IS-048-070716**	K1607636-002**	Soil	07/07/16
3	FTBL-IS-050-070716 **	K1607636-003	Soil	07/07/16
4	FTBL-IS-049-070716 **	K1607636-004	Soil	07/07/16
5	FTBL-IS-034-070716 *X	K1607636-005	Soil	07/07/16
6	FTBL-IS-056-070716	K1607636-006	Soil	07/07/16
7	EB070716 **	K1607636-007	Water	07/07/16
8	EB070516	K1607636-008	Water	07/05/16
9	FTBL-IS-057-070716MS	K1607636-001MS	Soil	07/07/16
10	FTBL-IS-057-070716MSD	K1607636-001MSD	Soil	07/07/16
11				
12				
13				

Notes:

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients ≥ 0.995 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm 2X$ RL ($\pm 2X$ RL for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the %Rs were outside the criteria, was a reanalysis performed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%Ds) < 10%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Target analytes were detected in the field duplicates.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XIII. Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target analytes were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: C

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1, 3-5 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Sb			0.046	0.115										

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2 (5X)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Sb			0.045	0.1125										

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All Soils

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Pb	0.017			0.085										

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	7									
Sb			0.020	0.1										
Be		0.008	0.009	0.045										
Pb		0.008	0.008	0.04	0.010									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET
Field BlanksPage: 1 of 1
Reviewer: SD
2nd Reviewer: E**METHOD:** Trace Metals (EPA Method 200.7/200.8)**Blank units:** ug/L **Associated sample units:** mg/kg**Sampling date:** 07/07/16**Field blank type:** (circle one) Field Blank / Rinsate / Other: EB **Associated Samples:** All Soils

Analyte	Blank ID	Sample Identification										
	7	Action Limit	No Qual.									
Cu	0.11	0.000550										
Pb	0.010	0.000050										
Ni	0.15	0.000750										
Zn	0.5	0.002500										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

<u>Y</u> N N/A	Was a matrix spike analyzed for each matrix in this SDG?
<u>Y</u> N N/A	Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.
<u>Y</u> N N/A	Were all duplicate sample relative percent differences (RPD) $\leq 20\%$ for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

[illegible]

Comments: _____

VALIDATION FINDINGS WORKSHEET **Initial and Continuing Calibration Calculation Verification**

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
ICV 17:40	ICP/MS (Initial calibration)	Sb	26.6 ug/L	25 ug/L	106%R	106%R	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV (S) 20:47	ICP/MS (Continuing calibration)	As	25.56 ug/L	25 ug/L	102%R	102%R	Y
	CVAA (Continuing calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibration)						

Comments: _____

LDC #: 36FS3E4₂

VALIDATION FINDINGS WORKSHEET **Level IV Recalculation Worksheet**

Page: 1 of 1
 Reviewer: JD
 2nd Reviewer: Q

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
 True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
 D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
 SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
ICS AB 18:07	ICP interference check	Cu	44.86 ug/L	50 ug/L	90%R	90%R	Y
LCS 21:18	Laboratory control sample	Be	112 ug/L	100 ug/L	112%R	112%R	Y
MS 21:10	Matrix spike	Pb	(SSR-SR) 93.81 mg/kg	101.07 mg/kg	93%R	93%R	Y
MSD 21:14	Duplicate	Ni	109.05 mg/kg	109.60 mg/kg	0.5%RPD	0.8%RPD	Y*
SER 21:02	ICP serial dilution	Zn	122.95 ug/L	125.93 ug/L	2%D	2%D	Y

 Comments: *Pounding

Reviewer: 

2nd reviewer:

Sample Calculation Verification

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?

Y	N	N/A	Are results within the calibrated range of the instruments and within the linear range of the ICP?
---	---	-----	--

Y	N	N/A	Are all detection limits below the CRDL?

Detected analyte results for (1) SP were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(\text{RD})(\text{FV})(\text{Dil})}{(\text{In. Vol.})(\% \text{ solids})}$$

Recalculation: $(0.3481 \text{ g/L}) (100 \text{ mL}) (5)$

RD = Raw data concentration

FV = Final volume (ml)

In. Vol. = Initial volume (ml) or weight (G)

Dil = Dilution factor

$$ED = 0.31481 \mu g/L$$
$$FV = 100 \text{ m}$$
$$1) \text{ In. } W = 10$$

% solids = 0.928

Page 5

(19) (0.988)

$$\frac{1 \text{ mg}}{1000 \text{ g}} = 0.159 \text{ mg/kg}$$
[illegible]

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 8, 2016

Parameters: Explosives

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1607636

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-057-070716	K1607636-001	Soil	07/07/16
FTBL-IS-048-070716	K1607636-002	Soil	07/07/16
FTBL-IS-050-070716	K1607636-003	Soil	07/07/16
FTBL-IS-049-070716	K1607636-004	Soil	07/07/16
FTBL-IS-034-070716	K1607636-005	Soil	07/07/16
EB070716	K1607636-007	Water	07/07/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 15.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

Retention time windows were established as required by the method.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG1605670-3	07/11/16	1,3-Dinitrobenzene 2,6-Dinitrotoluene	0.10 ug/L 0.12 ug/L	All water samples in SDG K1607636

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

V. Field Blanks

Sample EB070716 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples
EB070716	07/07/16	4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	0.18 ug/L 0.13 ug/L 2.0 ug/L	All soil samples in SDG K1607636

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates/Triplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
FTBL-IS-057-070716MS/MSD (FTBL-IS-057-070716)	HMX 3,5-Dinitroaniline 2,6-Dinitrotoluene	73 (74-124) 80 (86-118) 78 (79-117)	- 81 (86-118) -	J (all detects) UJ (all non-detects)	A

Relative percent differences (RPD) were within QC limits.

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
KWG1605985-8 (All soil samples in SDG K1607636)	HMX 3,5-Dinitroaniline 2,6-Dinitrotoluene	72 (74-124) 75 (86-118) 78 (79-117)	NA	J (all detects) UJ (all non-detects)	P
KWG1605670-1/2 (All water samples in SDG K1607636)	HMX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 2-Amino-4,6-Dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene Pentaerythritol tetranitrate	62 (65-135) 70 (73-125) 71 (78-120) 69 (71-117) 68 (76-125) 72 (79-120) 69 (71-123) 66 (77-127) 73 (78-120) 66 (70-127) 66 (71-127) 65 (73-125) 67 (73-127)	- - - - - - - - - - - - -	J (all detects) UJ (all non-detects)	P

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
KWG1605670-1/2 (All water samples in SDG K1607636)	1,3,5-Trinitrobenzene 3,5-Dinitroaniline Tetryl 4-Amino-2,6-Dinitrotoluene 2-Amino-4,6-Dinitrotoluene 2,4,6-Trinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene Nitroglycerin Pentaerythritol tetranitrate	21 (≤ 20) 21 (≤ 20) 22 (≤ 20) 22 (≤ 20) 21 (≤ 20) 22 (≤ 20) 22 (≤ 20) 21 (≤ 20) 23 (≤ 20) 21 (≤ 20) 23 (≤ 20)	J (all detects) UJ (all non-detects)	Ps

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits with the following exceptions:

SRM ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
KWG1605985-3	3,5-Dinitroaniline Tetryl	80 (86-118) 56 (68-135)	All soil samples in SDG K1607636	UJ (all non-detects) UJ (all non-detects)	P

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
FTBL-IS-050-070716	HMX	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	A
EB070716	4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects) NJ (all detects) NJ (all detects)	A

XI. Target Compound Identifications

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R, LCS/LCSD %R and RPD, and SRM %R, data were qualified as estimated in six samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Explosives - Data Qualification Summary - SDG K1607636

Sample	Compound	Flag	A or P	Reason
FTBL-IS-057-070716	HMX 3,5-Dinitroaniline 2,6-Dinitrotoluene	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
FTBL-IS-057-070716 FTBL-IS-048-070716 FTBL-IS-050-070716 FTBL-IS-049-070716 FTBL-IS-034-070716	HMX 3,5-Dinitroaniline 2,6-Dinitrotoluene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
EB070716	HMX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene 2-Amino-4,6-Dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene Pentaerythritol tetranitrate	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
EB070716	1,3,5-Trinitrobenzene 3,5-Dinitroaniline Tetryl 4-Amino-2,6-Dinitrotoluene 2-Amino-4,6-Dinitrotoluene 2,4,6-Trinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene Nitroglycerin Pentaerythritol tetranitrate	J (all detects) UJ (all non-detects)	P	Laboratory control samples (RPD)
FTBL-IS-057-070716 FTBL-IS-048-070716 FTBL-IS-050-070716 FTBL-IS-049-070716 FTBL-IS-034-070716	3,5-Dinitroaniline Tetryl	UJ (all non-detects) UJ (all non-detects)	P	Standard reference material (%R)
FTBL-IS-050-070716	HMX	NJ (all detects)	A	Compound quantitation (no confirmation)
EB070716	4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	NJ (all detects) NJ (all detects) NJ (all detects)	A	Compound quantitation (no confirmation)

Fort Bliss, Castner Range
Explosives - Laboratory Blank Data Qualification Summary - SDG K1607636

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Explosives - Field Blank Data Qualification Summary - SDG K1607636

No Sample Data Qualified in this SDG

LDC #: 36953E40
SDG #: K1607636
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 8/3/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	$RE \leq 15\%$, Y^2 $1 CV \leq 20\%$
III.	Continuing calibration	A	$CV \leq 20\%$
IV.	Laboratory Blanks	W	Not reviewed for ADR validation.
V.	Field blanks	W	
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates TRP	W/A	Not reviewed for ADR validation.
VIII.	Laboratory control samples	W	Not reviewed for ADR validation. LCS/D
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	W	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Overall assessment of data	A	Not reviewed for ADR validation

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-057-070716**	K1607636-001**	Soil	07/07/16
2	FTBL-IS-048-070716**	K1607636-002**	Soil	07/07/16
3	FTBL-IS-050-070716 **	K1607636-003 **	Soil	07/07/16
4	FTBL-IS-049-070716 **	K1607636-004 **	Soil	07/07/16
5	FTBL-IS-034-070716 **	K1607636-005 **	Soil	07/07/16
6	FTBL-IS-056-070716	K1607636-006	Soil	07/07/16
7	EB070716 **	K1607636-007 **	Water	07/07/16
8	FTBL-IS-057-070716MS	K1607636-001MS	Soil	07/07/16
9	FTBL-IS-057-070716MSD	K1607636-001MSD	Soil	07/07/16
10	FTBL-IS-057-070716DUP	K1607636-001DUP	Soil	07/07/16
11	FTBL-IS-057-070716TRP	K1607636-001TRP	Soil	07/07/16
12				
13				
14				
15				
16				

Method: GC / HPLC

Validation Area	Yes	No	NA	Findings/Comments
II. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) ¹⁵ < 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 20% or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) < 20% or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Field Blanks				
Were field blanks identified in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TRP
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

LDC #: 3695340

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: SK
2nd Reviewer: SK

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Pentaerythritol Tetranitrate		P. Fenthion		
Q.	Q. 3,5-Dinitroaniline		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

VALIDATION FINDINGS WORKSHEET

BlanksMETHOD: 106 HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ Y ☐ N ☐ N/A Were all samples associated with a given method blank?
☒ Y ☐ N ☐ N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
☒ Y ☐ N ☐ N/A Was a method blank performed with each extraction batch?
☒ Y ☐ N ☐ N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Blank extraction date: 7/11/16 Blank analysis date: 7/20/16Conc. units: ng/LAssociated samples: all H2O's

Compound	Blank ID	Sample Identification							
<u>KN 1605670-3</u>									
<u>D</u>	<u>0.10</u>								
<u>K</u>	<u>0.12</u>								

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification							

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 36953240VALIDATION FINDINGS WORKSHEET
Field BlanksPage: 6 of 1
Reviewer: 9
2nd Reviewer: A

METHOD: GC

(Y) N N/A Field blanks were identified in this SDG.
(Y) N N/A Were target compounds detected in the field blanks?Blank units: MS/Kg Associated sample units: MS/KgSampling date: 7/7/16Field blank type: (circle one) Field Blank / Rinsate / Other: EBAssociated Samples: all soils (NO)

Compound	Blank ID	Sample Identification							
	<u>7</u>								
<u>N</u>	<u>0.18</u>								
<u>M</u>	<u>0.13</u>								
<u>O</u>	<u>2.0</u>								

Blank units: _____ Associated sample units: _____

Sampling date: _____

Field blank type: (circle one) Field Blank / Rinsate / Other: _____

Associated Samples: _____

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Samples with compound concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y/N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y	N	N/A	Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

[illegible]

VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	<u>KNF1605985-3</u> <u>SRM</u>	<u>Q</u>	<u>80</u> (<u>86-118</u>)	()	()	<u>all soils (N/D)</u>	<u>✓</u> <u>N/A</u> <u>P</u>
		<u>E</u>	<u>56</u> (<u>68-130</u>)	()	()		<u>✓</u>
			()	()	()		
			()	()	()		
	<u>KNF1605985-8</u> <u>LCS</u>	<u>A</u>	<u>72</u> (<u>74-124</u>)	()	()	<u>all soils (det+N/D)</u>	<u>✓</u> <u>N/A</u> <u>P</u>
		<u>Q</u>	<u>75</u> (<u>86-118</u>)	()	()		<u>✓</u>
		<u>K</u>	<u>78</u> (<u>79-117</u>)	()	()		<u>✓</u>
			()	()	()		
	<u>KNF1605670-1/-2</u>	<u>A</u>	<u>62</u> (<u>65-135</u>)	()	()	<u>all H₂O₂ (det+N/D)</u>	<u>✓</u> <u>N/A</u> <u>P</u>
		<u>C</u>	<u>70</u> (<u>73-125</u>)	()	()		
		<u>D</u>	<u>71</u> (<u>78-120</u>)	()	()		
		<u>Q</u>	<u>69</u> (<u>71-117</u>)	()	()		
		<u>H</u>	<u>68</u> (<u>70-125</u>)	()	()		
		<u>XI</u>	<u>72</u> (<u>79-120</u>)	()	()		
		<u>F</u>	<u>69</u> (<u>71-123</u>)	()	()		
		<u>K</u>	<u>66</u> (<u>77-127</u>)	()	()		
		<u>J</u>	<u>73</u> (<u>78-120</u>)	()	()		
		<u>L</u>	<u>66</u> (<u>70-127</u>)	()	()		
		<u>N</u>	<u>66</u> (<u>71-127</u>)	()	()		
		<u>M</u>	<u>65</u> (<u>73-125</u>)	()	()		
		<u>P</u>	<u>67</u> (<u>73-127</u>)	()	()		
		<u>C</u>	()	()	<u>21</u> (<u>≤20</u>)		<u>✓</u> <u>N/A</u> <u>P</u>
		<u>Q</u>	()	()	<u>21</u> (<u>↓</u>)		<u>✓</u>
		<u>E</u>	()	()	<u>22</u> (<u>↓</u>)		<u>✓</u>

VALIDATION FINDINGS WORKSHEET

Laboratory Control Samples (LCS)

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y(N)N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y/N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

[illegible]

LDC #: 36953240

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y/N/N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y/N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

LDC #: 36953240

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

Page: 1 of 1Reviewer: 92nd Reviewer: 2METHOD: GC _____ HPLC ✓

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = 100 * (S/X)

A = Area of compound,

C = Concentration of compound,

S = Standard deviation of the CF

X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (100 std)	CF (100 std)	Average CF (initial)	Average CF (initial)	%RSD	%RSD
1	10AL (LC08)	6/8/16	M	24900	24904	26800	26800	11.7	11.8
2	10AL (LC10)	7/13/16	A	14400	14390	14200	14200	12.1	12.0
			CF	41800	41765	42200	42200	0.7	0.7
			0	19500	19466	19300	19288	9.7	9.0
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36953 E40

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1
 Reviewer: Q
 2nd Reviewer: A

METHOD: GC ✓ HPLC 0

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
 CF = A/C

Where: ave. CF = initial calibration average CF
 CF = continuing calibration CF
 A = Area of compound
 C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	080300027	8/4/16	A	14200	12300	12310	13	13
			E	42200	43900	43948	4	4
			D	19300	20500	20693	7	7
2	080300040	8/4/16	A	14200	12600	12560	11	12
			E	42200	42500	42460	1	1
			D	19300	20100	20142	5	4
3	080900118	8/10/16	M	26800	27900	27909	4	4
	080900127		M	26800	28800	288155	7	7
4	T1600024A	7/20/16	A	14200	14000	14037	1	1
			E	42200	43500	43744	4	4
			D	19300	21300	21275	10	10

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36953 E40

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1
 Reviewer: y
 2nd Reviewer: it

METHOD: GC _____ HPLC ✓

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
 CF = A/C

Where: ave. CF = initial calibration average CF
 CF = continuing calibration CF
 A = Area of compound
 C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF (Ical)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	T16000256	7/20/16	A	14200	13800	13803	3	3
			F	42200	43100	43104	4	4
			D	19300	21400	21390	11	11
2	OT18000367	7/29/16	M	26800	28500	28500	6	6
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36943240

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: 12

METHOD: GC ☒ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
1-chloro-3-nitrobenzene		500	418	84	84	0

Sample ID: 7

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
1-chloro-3-nitrobenzene		500	420	84	84	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #: 36953240

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: GC ☒ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$

Where

SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

MS = Matrix spike

MSD = Matrix spike duplicate

RPD = $((SSCMS - SSCMSD) * 2) / (SSCMS + SSCMSD) * 100$ MS/MSD samples: 8/9

Compound	Spike Added (mg/L)		Sample Conc. (mg/L)	Spike Sample Concentration (mg/L)		Matrix spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)	2.02	2.02	0.13	1.61	1.66	73	73	75	76	3	3
2,4,6-Trinitrotoluene (8330)	↓	↓	ND	1.76	1.83	87	87	90	90	4	4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 345240

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 8

METHOD: GC HPLC

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA
RPD = |SSCLCS - SSCLCSD| * 2/(SSCLCS + SSCLCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery

SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: KN41605985-8

Compound	Spike Added (mg/L)		Spiked Sample Concentration (mg/L)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)	200	NA	1.43	NA	72	72				
2,4,6-Trinitrotoluene (8330)	↓	↓	1.77	↓	89	89				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3193240VALIDATION FINDINGS WORKSHEET
Sample Calculation VerificationPage: 1 of 1Reviewer: 92nd Reviewer: XMETHOD: GC ☒ HPLCY N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= $\frac{(A)(F_v)(D_f)}{(RF)(V_s \text{ or } W_s)(\%S/100)}$

Example:

Sample ID. 1 Compound Name A

A= Area or height of the compound to be measured

Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound
In the initial calibration

Vs= Initial volume of the sample

Ws= Initial weight of the sample

%S= Percent Solid

$$\text{Concentration} = \frac{(2365985)(8)(1)}{(14200)(10.0428)(0.988)(1000)} \\ = 0.13 \text{ mg/kg}$$

#	Sample ID	Compound	Reported Concentrations ()	Recalculated Results Concentrations ()	Qualifications

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: September 12, 2016

Parameters: Perchlorate

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1607636

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-057-070716	K1607636-001	Soil	07/07/16
FTBL-IS-048-070716	K1607636-002	Soil	07/07/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Perchlorate by Environmental Protection Agency (EPA) SW 846 Method 6850

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance check was performed prior to initial calibration.

All perchlorate ion signal to noise ratio requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0%.

The isotope ratios were within QC limits.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 15.0%.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 15.0%.

The isotope ratios were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
FTBL-IS-057-070716MS/MSD (FTBL-IS-057-070716)	Perchlorate	-	124 (84-121)	NA	-

Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Internal Standards

All internal standard recoveries (%R) were within QC limits.

XI. Compound Quantitation

All compound quantitations were within validation criteria.

XII. Target Compound Identifications

All target compound identifications were within validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Perchlorate - Data Qualification Summary - SDG K1607636

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Perchlorate - Laboratory Blank Data Qualification Summary - SDG K1607636

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Perchlorate - Field Blank Data Qualification Summary - SDG K1607636

No Sample Data Qualified in this SDG

VALIDATION COMPLETENESS WORKSHEET

SDG #: K1607636

~~ADR/IV~~

Laboratory: ALS Environmental

Date: 8/31/16

Page: 7 of 7

Reviewer: 9

2nd Reviewer: M

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	Not reviewed for ADR validation.
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A - A	$RSD \leq 15\%$, $ICV \leq 15\%$
IV.	Continuing calibration	A	$CCV \leq 15\%$
V.	Laboratory Blanks	A	Not reviewed for ADR validation.
VI.	Field blanks	N	
VII.	Surrogate spikes	N	Not reviewed for ADR validation.
VIII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
IX.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
X.	Field duplicates	N	
XI.	Internal standards	A	Not reviewed for ADR validation.
XII.	Compound quantitation RL/LOQ/LODs	A	Not reviewed for ADR validation.
XIII.	Target compound identification	A	Not reviewed for ADR validation.
XIV.	System performance	A	Not reviewed for ADR validation.
XV.	Overall assessment of data	A	Not reviewed for ADR validation.

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-057-070716**	K1607636-001**	Soil	07/07/16
2	FTBL-IS-048-070716**	K1607636-002**	Soil	07/07/16
3	FTBL-IS-050-070716	K1607636-003	Soil	07/07/16
4	FTBL-IS-049-070716	K1607636-004	Soil	07/07/16
5	FTBL-IS-034-070716	K1607636-005	Soil	07/07/16
6	FTBL-IS-056-070716	K1607636-006	Soil	07/07/16
7	FTBL-IS-057-070716MS	K1607636-001MS	Soil	07/07/16
8	FTBL-IS-057-070716MSD	K1607636-001MSD	Soil	07/07/16
9				
10				

Notes:

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LDC #: 36953087

VALIDATION FINDINGS CHECKLIST

Page: 1 of 3
Reviewer: Q
2nd Reviewer: It

Method: LCMS (EPA Method 537)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. LC/MS instrument performance check				
Were the instrument performance reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 12 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) < 15%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of > 0.990?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) ≤ 15%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) of the continuing calibration < 15%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VI. Field blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

LDC #: 36953 ²87

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer: 1

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
XI. Internal standards				
Were internal standard area counts within $\pm 50\%$ of the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were retention times within ± 30 seconds from the associated calibration standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were chromatogram peaks verified and accounted for?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIV. System performance				
System performance was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

METHOD: GC / HPLC *als*

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y1N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

[illegible]

LDC #: 36953287

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: GC ✓ HPLC [Signature]

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (10 std)	CF (10 std)	Average CF (initial)	Average CF (initial)	%RSD	%RSD
1	1CF2	8/11/16	Peracetic Acid	1.151	1.151	1.205	1.205	9.6	9.6
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 36153687

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: X

METHOD: GC ✓ HPLC MD

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(lcal)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	CCV	8/17/16 (2040)	Perchlorate	1.00	1.06	1.056	6	5.6
2								
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3/53637

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 4

METHOD: GC /HPLC /MS

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC - SC) / SA$

Where

SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

MS = Matrix spike

MSD = Matrix spike duplicate

RPD = $((SSCMS - SSCMSD) * 2) / (SSCMS + SSCMSD) * 100$ MS/MSD samples: 7/8

Compound	Spike Added (NS/g)		Sample Conc. (NS/g)	Spike Sample Concentration (NS/g)		Matrix spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.	
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
Pentachloro	4.35	4.84	ND	5.28	6.02	121	121	124	124	2	2

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

METHOD: GC ☒ HPLC MS

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 \times (\text{SSC} - \text{SC}) / \text{SA}$$
$$\text{RPD} = | \text{SSCLCS} - \text{SSCLCSD} | \times 2 / (\text{SSCLCS} + \text{SSCLCSD})$$

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery

SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: KR1609059-04

Compound	Spike Added (<u>15/9</u>)		Spiked Sample Concentration (<u>15/9</u>)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
<u>Perchlorate</u>	<u>5.00</u>	<u>NA</u>	<u>5.65</u>	<u>NA</u>	<u>113</u>	<u>113</u>				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 364378TVALIDATION FINDINGS WORKSHEET
Sample Calculation VerificationPage: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]METHOD: GC ☒ HPLC MSY N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration = $\frac{(A)(F_v)(D_f)}{(RF)(V_s \text{ or } W_s)(\%S/100)}$

Example:

Sample ID: All Compound Name: ND
KQ1609059-04

$$\text{Concentration} = \frac{(3704200)(5)(10)}{(2427000)(1.205)(1)}$$
$$= 5.65 \text{ ng/g}$$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound
in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

#	Sample ID	Compound	Reported Concentrations ()	Recalculated Results Concentrations ()	Qualifications

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 15, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fractions listed below. This SDG was received on September 6, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37009:

SDG #

K1607675

Fraction:

Metals, Explosives

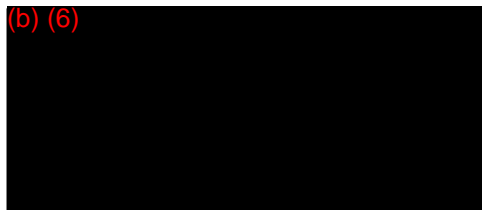
The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)



Project Manager/Senior Chemist

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**Data Validation Report
Fort Bliss, Castner Range**

SDG: K1607675

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 13, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the July 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory replicates (REP), laboratory control sample/laboratory control sample duplicates (LCS/LCSD), field triplicates, and internal standards. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications (ICV) of the methods were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the methods were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software program with the exception of two method blanks for lead and one method blank for beryllium, 1,3-dinitrobenzene, and 2,6-dinitrotoluene. The associated sample results were qualified as non-detected (U) due to method blank contamination as applicable. The sample results that were not detected or were significantly greater than the concentrations found in the associated blanks were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1607675/ 6020A	ICB/CCB	Antimony	0.046 ug/L	FTBL-IS-114-070816-A FTBL-IS-114-070816-B FTBL-IS-114-070816-C FTBL-IS-093-070816-A FTBL-IS-093-070816-B FTBL-IS-093-070816-C FTBL-IS-113-070816
K1607675/ 6020A	ICB/CCB	Antimony	0.023 ug/L	FTBL-IS-090-070816
K1607675/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.020 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1607675

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Analyte	Reported Concentration	Modified Final Concentration
K1607675/ 6020A	EB070816	Lead	0.010 ug/L	0.010U ug/L

VI. Field Blanks

One equipment blank was collected and analyzed for metals and explosives. The equipment blank had detections for metals and explosives. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

X. Replicate Sample Analysis

Laboratory replicates (REP) sample analysis was performed on an associated project sample. Results were within QC limits.

XI. Serial Dilution

Serial dilution was not performed for this SDG.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS/LCSD pair for explosives. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

XIII. Field Triplicates

Two sets of field triplicates were collected and analyzed for metals and explosives. All RSDs were within QC limits with the exception of nitroglycerin and 1,3,5-trinitrobenzene in one triplicate. The associated samples were not qualified when one or more results were less than 5x the limit of quantitation (LOQ). The field triplicate comparisons are provided in Enclosure I.

XIV. Internal Standards

All internal standard percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1607675/ 8330B	FTBL-IS-114-070816-A	Nitroglycerin	2nd column confirmation was not performed for this compound.	2nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607675/ 8330B	FTBL-IS-093-070816-B	1,3,5-Trinitrobenzene	2nd column confirmation was not performed for this compound.	2nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1607675/ 8330B	EB070816	4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	2nd column confirmation was not performed for this compound.	2nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects)	A

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to LCS/LCSD %R, data were qualified as estimated in one sample.

Due to SRM %R, data were qualified as estimated in eight samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in three samples.

Due to results reported below the LOQ, data were qualified as estimated in four samples.

Due to laboratory and calibration blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-Jul-2016	FTBL-IS-114-070816-A	K1607675-001	FT	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-A	K1607675-001	FT	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-AREP2	KWG1606049-4	REP	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-AREP1	KWG1606049-5	REP	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-AMS	KWG1606049-6	MS	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-AMSD	KWG1606049-7	MSD	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-093-070816-A	K1607675-004	FT	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-093-070816-A	K1607675-004	FT	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-B	K1607675-002	N	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-B	K1607675-002	N	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-093-070816-B	K1607675-005	N	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-093-070816-B	K1607675-005	N	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-C	K1607675-003	N	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-114-070816-C	K1607675-003	N	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-093-070816-C	K1607675-006	N	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-093-070816-C	K1607675-006	N	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-113-070816	K1607675-007	N	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-113-070816	K1607675-007	N	METHOD	8330B	S2BVEM
08-Jul-2016	FTBL-IS-090-070816	K1607675-008	N	EPA 3050B	6020A	S2BVEM
08-Jul-2016	FTBL-IS-090-070816	K1607675-008	N	METHOD	8330B	S2BVEM
08-Jul-2016	EB070816	K1607675-009	EB	CLFAA	6020A	S2BVEM
08-Jul-2016	EB070816	K1607675-009	EB	METHOD	8330B	S2BVEM

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	METALS								
Method:	6020A	Matrix:	Water						

Sample ID: EB070816		Collected: 7/8/2016 3:30:00 PM				Analysis Type: Initial/TOT			Dilution: 1.0
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.08	J	0.05	LOD	0.10	LOQ	ug/L	J	RI
NICKEL	0.10	J	0.05	LOD	0.20	LOQ	ug/L	J	RI
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI
LEAD	0.010	J	0.010	LOD	0.020	LOQ	ug/L	U	Mb, Cb

Method Category:	SVOA								
Method:	8330B	Matrix:	Soil						

Sample ID: FTBL-IS-090-070816		Collected: 7/8/2016 2:30:00 PM				Analysis Type: Initial			Dilution: 1
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.026	U,i	0.026	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-093-070816-A		Collected: 7/8/2016 9:05:00 AM				Analysis Type: Initial			Dilution: 1
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.024	U,i	0.024	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:06:02 AM

ADR version 1.9.0.325

Page 1 of 5

Data Qualifier Summary

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SV0A
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-093-070816-B		7/8/2016 11:10:00 Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.032	JN	0.082	LOD	0.082	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-093-070816-C		7/8/2016 1:15:00 PM Collected: 7/8/2016 1:15:00 PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-113-070816		7/8/2016 2:20:00 PM Collected: 7/8/2016 2:20:00 PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:06:02 AM

ADR version 1.9.0.325

Page 2 of 5

Data Qualifier Summary

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-114-070816-A

Collected: 7/8/2016 9:00:00 AM Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.060	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-114-070816-B

7/8/2016 11:00:00
Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	8.6	U	8.6	LOD	8.6	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	3.1	U,i	3.1	LOD	4.3	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	22	U	22	LOD	22	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	2.2	U	2.2	LOD	8.6	LOQ	mg/Kg	UJ	Lcs
HMX	2.2	U	2.2	LOD	4.3	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	22	U	22	LOD	22	LOQ	mg/Kg	UJ	Lcs
Tetryl	8.6	U	8.6	LOD	8.6	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-114-070816-C

Collected: 7/8/2016 1:10:00 PM Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:06:02 AM

ADR version 1.9.0.325

Page 3 of 5

Data Qualifier Summary

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SYOA
Method:	8330B
Matrix:	Water

Sample ID: EB070816

Collected: 7/8/2016 3:30:00 PM Analysis Type: Initial/TOT

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
1,3-DINITROBENZENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,4-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
2,6-DINITROTOLUENE	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
2-NITROTOLUENE	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs, Lcs
3-NITROTOLUENE	0.092	JN	0.10	LOD	0.10	LOQ	ug/L	NJ	RI, Lcs, Lcs, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs, Lcs
4-NITROTOLUENE	0.17	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, ProfJudg
HMX	0.10	U	0.10	LOD	0.10	LOQ	ug/L	UJ	Lcs
NITROGLYCERIN	2.2	N	1.0	LOD	1.0	LOQ	ug/L	NJ	Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	1.0	U	1.0	LOD	1.0	LOQ	ug/L	UJ	Lcs, Lcs
Tetryl	0.20	U	0.20	LOD	0.20	LOQ	ug/L	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:06:02 AM

ADR version 1.9.0.325

Page 4 of 5

Data Qualifier Summary

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Estimation
Mb	Method Blank Contamination
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:06:02 AM

ADR version 1.9.0.325

Page 5 of 5

Enclosure I
Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

K1607675

Method Blank Outlier Report

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609083-01	8/17/2016 8:55:00 PM	LEAD	0.017 mg/Kg	FTBL-IS-090-070816 FTBL-IS-093-070816-A FTBL-IS-093-070816-B FTBL-IS-093-070816-C FTBL-IS-113-070816 FTBL-IS-114-070816-A FTBL-IS-114-070816-B FTBL-IS-114-070816-C

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1607936-01	8/3/2016 12:50:00 PM	BERYLLIUM LEAD	0.008 ug/L 0.008 ug/L	EB070816

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB070816(Initial/TOT)	LEAD	0.010 ug/L	0.010U ug/L

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605670-3	7/20/2016 8:42:00 AM	1,3-DINITROBENZENE 2,6-DINITROTOLUENE	0.10 ug/L 0.12 ug/L	EB070816

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:05:45 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1606049-3 (FTBL-IS-090-070816 FTBL-IS-093-070816-A FTBL-IS-093-070816-B FTBL-IS-093-070816-C FTBL-IS-113-070816 FTBL-IS-114-070816-A FTBL-IS-114-070816-B FTBL-IS-114-070816-C)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene HMX NITROGLYCERIN Tetryl	75 75 64 60 67 65 44	- - - - - - -	80.00-116.00 79.00-117.00 86.00-118.00 64.00-127.00 74.00-124.00 73.00-124.00 68.00-135.00	- - - - - - -	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline 4-Amino-2,6-Dinitrotoluene HMX NITROGLYCERIN Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605670-1 KWG1605670-2 (EB070816)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	70 71 69 73 66 72 66 69 65 68 66 62 - 67 -	- - - - - - - - - - - - - - -	73.00-125.00 78.00-120.00 71.00-123.00 78.00-120.00 77.00-127.00 79.00-120.00 70.00-127.00 71.00-117.00 73.00-125.00 76.00-125.00 71.00-127.00 65.00-135.00 74.00-127.00 73.00-127.00 64.00-128.00	21 (20.00) - 22 (20.00) 22 (20.00) - 21 (20.00) 21 (20.00) 21 (20.00) 23 (20.00) 22 (20.00) - - 21 (20.00) 23 (20.00) 22 (20.00)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:05:47 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-093-070816-B	1,3,5-TRINITROBENZENE	JN	0.032	0.082	LOQ	mg/Kg	J (all detects)
FTBL-IS-114-070816-A	NITROGLYCERIN	JN	0.060	0.21	LOQ	mg/Kg	J (all detects)

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB070816	COPPER	J	0.08	0.10	LOQ	ug/L	J (all detects)
	LEAD	J	0.010	0.020	LOQ	ug/L	
	NICKEL	J	0.10	0.20	LOQ	ug/L	
	ZINC	J	0.3	0.5	LOQ	ug/L	

Method: 8330B
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB070816	3-NITROTOLUENE	JN	0.092	0.10	LOQ	ug/L	J (all detects)

Field Triplicate RSD Report

Lab Reporting Batch ID: K1607675

Laboratory: ALS_K

EDD Filename: K1607675_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-114-070816-A	FTBL- IS-114-070816-B	FTBL- IS-114-070816-C			
ANTIMONY	0.172	0.156	0.178	6.74	20.00	No Qualifiers Applied
ARSENIC	7.06	7.04	7.60	4.39	20.00	
BERYLLIUM	1.81	1.86	1.99	4.92	20.00	
COPPER	19.8	20.1	22.1	6.05	20.00	
LEAD	27.1	26.6	29.8	6.18	20.00	
NICKEL	11.0	11.5	11.9	3.93	20.00	
ZINC	62.8	64.8	70.2	5.81	20.00	

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-093-070816-A	FTBL- IS-093-070816-B	FTBL- IS-093-070816-C			
ANTIMONY	0.243	0.258	0.204	11.86	20.00	No Qualifiers Applied
ARSENIC	9.48	9.90	9.19	3.75	20.00	
BERYLLIUM	1.58	1.64	1.86	8.71	20.00	
COPPER	24.1	28.9	23.6	11.46	20.00	
LEAD	37.0	39.1	35.4	4.99	20.00	
NICKEL	13.5	13.1	12.5	3.86	20.00	
ZINC	95.0	101	91.1	5.21	20.00	

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-114-070816-A	FTBL- IS-114-070816-B	FTBL- IS-114-070816-C			
NITROGLYCERIN	0.060	22 U	0.21 U	NC	20.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-093-070816-A	FTBL- IS-093-070816-B	FTBL- IS-093-070816-C			
1,3,5-TRINITROBENZENE	0.081 U	0.032	0.081 U	NC	20.00	No Qualifiers Applied

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/13/2016 11:05:52 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37009A4a
 SDG #: K1607675
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 9/18/16
 Page: 1 of 1
 Reviewer: JS
 2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-114-070816-A	K1607675-001	Soil	07/08/16
2	FTBL-IS-114-070816-B	K1607675-002	Soil	07/08/16
3	FTBL-IS-114-070816-C	K1607675-003	Soil	07/08/16
4	FTBL-IS-093-070816-A	K1607675-004	Soil	07/08/16
5	FTBL-IS-093-070816-B	K1607675-005	Soil	07/08/16
6	FTBL-IS-093-070816-C	K1607675-006	Soil	07/08/16
7	FTBL-IS-113-070816	K1607675-007	Soil	07/08/16
8	FTBL-IS-090-070816	K1607675-008	Soil	07/08/16
9	EB070816	K1607675-009	Water	07/08/16
10				
11				
12				
13				

Notes:

[illegible]

ICP	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Ti, V, Zn, Mo, B, Sn, Ti,
ICP-MS	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Ti, V, Zn, Mo, B, Sn, Ti,
GEAA	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Ti, V, Zn, Mo, B, Sn, Ti,

020213

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1-7

					Sample Identification								
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	No Qual.								
Sb			0.046	0.115									

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 8

					Sample Identification								
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	No Qual.								
Sb			0.023	0.0575									

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Waters

					Sample Identification								
Analyte	Maximum PB* (mg/Kg)	Maximum PB* (ug/L)	Maximum ICB/CCB* (ug/L)	Blank Action Limit	9								
Sb			0.020	0.1									
Be			0.009	0.045									
Pb			0.008	0.04	0.010								

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 37009A40
SDG #: K1607675
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 9/6/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A-A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	W	EB = 9 (>5x r N D)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N/A	1TR
VIII.	Laboratory control samples	N	
IX.	Field duplicates	W	TP = 1+2+3, 4+5+6
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-114-070816-A	K1607675-001	Soil	07/08/16
2	FTBL-IS-114-070816-B	K1607675-002	Soil	07/08/16
3	FTBL-IS-114-070816-C	K1607675-003	Soil	07/08/16
4	FTBL-IS-093-070816-A	K1607675-004	Soil	07/08/16
5	FTBL-IS-093-070816-B	K1607675-005	Soil	07/08/16
6	FTBL-IS-093-070816-C	K1607675-006	Soil	07/08/16
7	FTBL-IS-113-070816	K1607675-007	Soil	07/08/16
8	FTBL-IS-090-070816	K1607675-008	Soil	07/08/16
9	EB070816	K1607675-009	Water	07/08/16
10	FTBL-IS-114-070816-AMS	K1607675-001MS	Soil	07/08/16
11	FTBL-IS-114-070816-AMSD	K1607675-001MSD	Soil	07/08/16
12	FTBL-IS-114-070816-ADUP	K1607675-001DUP	Soil	07/08/16
13	FTBL-IS-114-070816-ATRP	K1607675-001TRP	Soil	07/08/16
14				
15				
16				

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC#: 37009A40**VALIDATION FINDINGS WORKSHEET**
Field TriplicatesPage: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]**METHOD:** Explosives (EPA SW846 Method 8330B)Y N NA Were lab triplicates sets identified in this SDG?Y N NA Were target analytes detected in the field triplicate sets?

Compound	Concentration (mg/kg)			RSD ($\leq 20\%$)	Qual
	1	2	3		
O	0.060	22U	0.21U	170	NQ

Compound	Concentration (mg/kg)			RSD ($\leq 20\%$)	Qual
	4	5	6		
C	0.081U	0.032	0.081U	44	NQ

NQ = One or two results were $< 5x$ the Limit of Quantitation (LOQ), therefore no data were qualified.

V:\FIELD REPLICATES\37009A40_Arcadis.wpd

LDC #: 37009A40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer:

2nd Reviewer: 

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N ~~N/A~~ Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

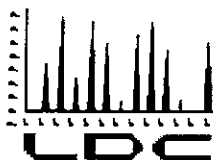
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y(N) N/A Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 13, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 30, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #36975:

SDG #

Fraction:

K1607772 & K1607853 Metals, Explosives

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

LDC #36975 (Arcadis-Millersville, MD / Fort Bliss, Castner Range)

[illegible]

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1607772, K1607853

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 9, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory replicates (REP), serial dilution, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), sample reference materials (SRM), field triplicates, and internal standards. No samples in this SDG were subjected to Level IV evaluation.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, and serial dilution, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the method.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications (ICV) of the methods were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the methods were met.

V. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software program.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1607772/ 6020A	ICB/CCB	Antimony	0.023 ug/L	FTBL-IS-091-071116
K1607772/ 6020A	ICB/CCB	Antimony	0.024 ug/L	FTBL-IS-112-071116 FTBL-IS-092-071116 FTBL-IS-111-071116 FTBL-IS-115-071116 FTBL-IS-108-071116
K1607853/ 6020A	ICB/CCB	Antimony	0.043 ug/L	All samples in SDG K1607853

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks.

VI. Field Blanks

No field blanks were identified in these SDGs.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives in two MS/MSD pairs and antimony and lead in one MS/MSD pair. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. No data were qualified for Antimony %R when the post-digestion spike %R was within QC limits. The details are provided in Enclosure I.

X. Replicate Sample Analysis

Laboratory replicates (REP) sample analysis was performed on an associated project sample. Results were within QC limits.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits with the following exceptions:

SDG/ Method	Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
K1607772/ 6020A	FTBL-IS-091-071116	Lead	12 (≤10)	FTBL-IS-091-071116	J (all detects)	A

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one LCS for explosives. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. Tetryl results in several samples were qualified as rejected (R) due to SRM %Rs grossly outside QC limits (i.e., ≤ 10%). The remainder of the associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

XIII. Field Triplicates

No field triplicates were identified in these SDGs.

XIV. Internal Standards

All internal standard percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1607853/ 8330B	FTBL-IS-096-071216	Nitrobenzene	2nd column confirmation was not performed for this compound.	2nd column confirmation should be performed for all detected results	NJ (all detects)	A

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to severe SRM %R, data were qualified as rejected in four samples.

Due to MS/MSD %R, data were qualified as estimated in two samples.

Due to LCS %R, data were qualified as estimated in four samples.

Due to SRM %R, data were qualified as estimated in ten samples.

Due to serial dilution %D, data were qualified as estimated in one sample.

Due to results not being confirmed, data were qualified as presumptive and estimated in one sample.

Due to results reported below the LOQ, data were qualified as estimated in one sample.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
11-Jul-2016	FTBL-IS-091-071116	K1607772-001	N	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-091-071116	K1607772-001	N	METHOD	8330B	III
11-Jul-2016	FTBL-IS-091-071116MS	K1607772-001MS	MS	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-091-071116MSD	K1607772-001SD	MSD	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-091-071116MS	KWG1606205-1	MS	METHOD	8330B	III
11-Jul-2016	FTBL-IS-091-071116MSD	KWG1606205-2	MSD	METHOD	8330B	III
11-Jul-2016	FTBL-IS-091-071116REP2	KWG1606205-5	REP	METHOD	8330B	III
11-Jul-2016	FTBL-IS-091-071116REP1	KWG1606205-6	REP	METHOD	8330B	III
11-Jul-2016	FTBL-IS-112-071116	K1607772-002	N	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-112-071116	K1607772-002	N	METHOD	8330B	III
11-Jul-2016	FTBL-IS-092-071116	K1607772-003	N	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-092-071116	K1607772-003	N	METHOD	8330B	III
11-Jul-2016	FTBL-IS-111-071116	K1607772-004	N	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-111-071116	K1607772-004	N	METHOD	8330B	III
11-Jul-2016	FTBL-IS-115-071116	K1607772-005	N	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-115-071116	K1607772-005	N	METHOD	8330B	III
11-Jul-2016	FTBL-IS-108-071116	K1607772-006	N	EPA 3050B	6020A	III
11-Jul-2016	FTBL-IS-108-071116	K1607772-006	N	METHOD	8330B	III
12-Jul-2016	FTBL-IS-109-071216	K1607853-001	N	EPA 3050B	6020A	III
12-Jul-2016	FTBL-IS-109-071216	K1607853-001	N	METHOD	8330B	III
12-Jul-2016	FTBL-IS-109-071216REP2	KWG1606079-3	REP	METHOD	8330B	III
12-Jul-2016	FTBL-IS-109-071216REP1	KWG1606079-4	REP	METHOD	8330B	III
12-Jul-2016	FTBL-IS-109-071216MS	KWG1606079-5	MS	METHOD	8330B	III
12-Jul-2016	FTBL-IS-109-071216MSD	KWG1606079-6	MSD	METHOD	8330B	III
12-Jul-2016	FTBL-IS-094-071216	K1607853-002	N	EPA 3050B	6020A	III
12-Jul-2016	FTBL-IS-094-071216	K1607853-002	N	METHOD	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Jul-2016	FTBL-IS-096-071216	K1607853-003	N	EPA 3050B	6020A	III
12-Jul-2016	FTBL-IS-096-071216	K1607853-003	N	METHOD	8330B	III
12-Jul-2016	FTBL-IS-095-071216	K1607853-004	N	EPA 3050B	6020A	III
12-Jul-2016	FTBL-IS-095-071216	K1607853-004	N	METHOD	8330B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1607772, K1607853

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A, K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607772

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-091-071116 Collected: 7/11/2016 9:00:00 AM Analysis Type: Initial Dilution: 5.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	48.5	J	0.013	LOD	0.051	LOQ	mg/Kg	J	Ms, ProfJudg

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-091-071116 Collected: 7/11/2016 9:00:00 AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.028	U,i	0.028	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

Sample ID: FTBL-IS-092-071116 Collected: 7/11/2016 11:15:00 AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-108-071116 Collected: 7/11/2016 2:10:00 PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 2:19:11 PM

ADR version 1.9.0.325

Page 1 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1607772, K1607853

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A, K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607772

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-111-071116 7/11/2016 11:20:00 Collected: AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-112-071116 7/11/2016 9:05:00 Collected: AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-115-071116 7/11/2016 2:00:00 Collected: PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

SDG: K1607853

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-094-071216 7/12/2016 9:25:00 Collected: AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.082	U,i	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 2:19:11 PM

ADR version 1.9.0.325

Page 2 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1607772, K1607853

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A, K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607853

Method Category: SVQA

Method: 8330B

Matrix: Soil

7/12/2016 9:25:00									
Sample ID: FTBL-IS-094-071216		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

7/12/2016 12:40:00									
Sample ID: FTBL-IS-095-071216		Collected: PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.071	U,i	0.071	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

7/12/2016 12:30:00									
Sample ID: FTBL-IS-096-071216		Collected: PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 2:19:11 PM

ADR version 1.9.0.325

Page 3 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1607772, K1607853

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A, K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607853

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-096-071216 7/12/2016 12:30:00 Collected: PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.080	U,i	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.013	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, Lcs, ProfJdg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-109-071216 7/12/2016 9:20:00 Collected: AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
3-NITROTOLUENE	0.076	U,i	0.076	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 2:19:11 PM

ADR version 1.9.0.325

Page 4 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1607772, K1607853

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A, K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1607853

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-109-071216

7/12/2016 9:20:00
Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 2:19:11 PM

ADR version 1.9.0.325

Page 5 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1607772, K1607853

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A, K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
ProfJudg	Professional Judgment
Rl	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 2:19:11 PM

ADR version 1.9.0.325

Page 6 of 6

Enclosure I
Level III ADR Outliers
(Including Manual Review Outliers)

Quality Control Outlier Reports

K1607772

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607772

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-091-071116MS (Dry)	ANTIMONY	34	34	72.00-124.00	-	ANTIMONY	Sb, No Qual, Post Spike = 111% Pb, J (all detects)
FTBL-IS-091-071116MSD (Dry)	LEAD	83	82	84.00-118.00	-	LEAD	
(FTBL-IS-091-071116)							

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-091-071116MS	1,3,5-TRINITROBENZENE	64	-	80.00-116.00	29 (20.00)	1,3,5-TRINITROBENZENE	J(all detects) UJ(all non-detects)
FTBL-IS-091-071116MSD	1,3-DINITROBENZENE	72	-	73.00-119.00	-	1,3-DINITROBENZENE	
(FTBL-IS-091-071116)	2,4,6-TRINITROTOLUENE	65	-	71.00-120.00	29 (20.00)	2,4,6-TRINITROTOLUENE	
	2,6-DINITROTOLUENE	67	-	79.00-117.00	-	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	63	-	71.00-123.00	33 (20.00)	2-AMINO-4,6-DINITROTOLU	
	3,5-Dinitroaniline	56	82	86.00-118.00	37 (20.00)	3,5-Dinitroaniline	
	4-Amino-2,6-Dinitrotoluene	54	-	64.00-127.00	38 (20.00)	4-Amino-2,6-Dinitrotoluene	
	HMX	52	73	74.00-124.00	34 (20.00)	HMX	
	NITROGLYCERIN	67	-	73.00-124.00	23 (20.00)	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	70	-	72.00-128.00	32 (20.00)	Pentaerythritol Tetranitrate	
	RDX	54	-	67.00-129.00	40 (20.00)	RDX	
	Tetryl	59	-	68.00-135.00	33 (20.00)	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 1:44:12 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607772

Laboratory: ALS_K

EDD Filename: K1607772_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1606205-7 (FTBL-IS-091-071116 FTBL-IS-092-071116 FTBL-IS-108-071116 FTBL-IS-111-071116 FTBL-IS-112-071116 FTBL-IS-115-071116)	3,5-Dinitroaniline Tetryl	78 54	- -	86.00-118.00 68.00-135.00	- -	3,5-Dinitroaniline Tetryl	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 1:46:14 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36975A4a
SDG #: K1607772
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/31/14
Page: 1 of 1
Reviewer: SD
2nd Reviewer: SM

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MSD = Sb out; PS in = NR
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	SW	SER = (-)
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-091-071116	K1607772-001	Soil	07/11/16
2	FTBL-IS-112-071116	K1607772-002	Soil	07/11/16
3	FTBL-IS-092-071116	K1607772-003	Soil	07/11/16
4	FTBL-IS-111-071116	K1607772-004	Soil	07/11/16
5	FTBL-IS-115-071116	K1607772-005	Soil	07/11/16
6	FTBL-IS-108-071116	K1607772-006	Soil	07/11/16
7	FTBL-IS-091-071116MS	K1607772-001MS	Soil	07/11/16
8	FTBL-IS-091-071116MSD	K1607772-001MSD	Soil	07/11/16
9				
10				
11				
12				
13				

Notes: #16 = Sample name on bottle used instead of Sample name on CAC

LDC #: 3675A46

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: \ of \

Reviewer: 3D

2nd reviewer:

All circled elements are applicable to each sample.

[illegible]


Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 1 (5X Dil)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (µg/l)	Maximum ICB/CCB ^a (µg/l)	Blank Action Limit	No Qual.									
Sb			0.023	0.0575										

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: 2-6 (5X Dil)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (µg/l)	Maximum ICB/CCB ^a (µg/l)	Blank Action Limit	No Qual.									
Sb			0.024	0.06										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 36975A40
SDG #: K1607772
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 8/1/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A / A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /TR	N / A	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-091-071116	K1607772-001	Soil	07/11/16
2	FTBL-IS-112-071116	K1607772-002	Soil	07/11/16
3	FTBL-IS-092-071116	K1607772-003	Soil	07/11/16
4	FTBL-IS-111-071116	K1607772-004	Soil	07/11/16
5	FTBL-IS-115-071116	K1607772-005	Soil	07/11/16
6	FTBL-IS-108-071116	K1607772-006	Soil	07/11/16
7	FTBL-IS-091-071116MS	K1607772-001MS	Soil	07/11/16
8	FTBL-IS-091-071116MSD	K1607772-001MSD	Soil	07/11/16
9	FTBL-IS-091-071116DUP	K1607772-001DUP	Soil	07/11/16
10	FTBL-IS-091-071116TRP	K1607772-001TRP	Soil	07/11/16
11				
12				
13				

Notes:

Quality Control Outlier Reports

K1607853

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607853

Laboratory: ALS_K

EDD Filename: K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-109-071216MS	2,6-DINITROTOLUENE	77	76	79.00-117.00	-	2,6-DINITROTOLUENE	J (all detects)
FTBL-IS-109-071216MSD	3,5-Dinitroaniline	80	-	86.00-118.00	-	3,5-Dinitroaniline	UJ (all non-detects)
(FTBL-IS-109-071216)	HMX	71	-	74.00-124.00	-	HMX	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 1:46:39 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1607853

Laboratory: ALS_K

EDD Filename: K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1606079-2 (FTBL-IS-094-071216 FTBL-IS-095-071216 FTBL-IS-096-071216 FTBL-IS-109-071216)	Tetryl	0	-	68.00-135.00	-	Tetryl	J (all detects) R (all non-detects)
KWG1606079-2 KWG1606079-7 (FTBL-IS-094-071216 FTBL-IS-095-071216 FTBL-IS-096-071216 FTBL-IS-109-071216)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	15 44 37 52 47 53 50 57 54 45 50 47 50 42 49 50	- - - - - - - - - - - - - - - -	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 86.00-118.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00	- - - - - - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3,5-Dinitroaniline 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 1:46:47 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1607853

Laboratory: ALS_K

EDD Filename: K1607853_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-096-071216	NITROBENZENE	JN	0.013	0.080	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

9/8/2016 1:46:53 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 36975B4a
 SDG #: K1607853
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 8/3/18
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	7/12/18
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-109-071216	K1607853-001	Soil	07/12/16
2	FTBL-IS-094-071216	K1607853-002	Soil	07/12/16
3	FTBL-IS-096-071216	K1607853-003	Soil	07/12/16
4	FTBL-IS-095-071216	K1607853-004	Soil	07/12/16
5				
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 3875B4

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: JD

2nd reviewer: _____

All circled elements are applicable to each sample.

[illegible]

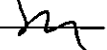
Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: 100X

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/kg

Associated Samples: All (5X Dil)

					Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.									
Sb			0.043	0.1075										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 36975B10

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: Q

2nd Reviewer: hm

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

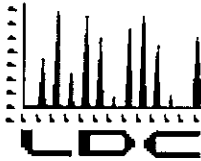
Y	N	N/A	Did the reported results for detected target compounds agree within 10.0% of the recalculated results?
---	---	-----	--

Y	N	N/A	Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?
---	---	-----	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

September 22, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fractions listed below. This SDG was received on September 9, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37038:

<u>SDG #</u>	<u>Fraction:</u>
K1608011	Metals, Explosives

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

[illegible]

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37038ST.wpd

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Bliss-Castner Range\37038ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

SDG: K1608011

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

September 16, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the June 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the USEPA CLPNFG Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Metals by EPA SW 846 Method 6020A

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. No samples in this SDG were subjected to Level IV evaluation.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), equipment blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), duplicate sample analysis (DUP), triplicate sample analysis (TRP), serial dilution, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), field triplicates, and internal standards.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, ICB/CCBs, serial dilution, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive). Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the methods.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications (CCV) of the methods were met with the following exceptions:

SDG/ Method	Date	Standard	Compound	%D (limits)	Associated Samples	Flag	A or P
K1608011/ 8330B	08/02/16	0730000216	Pentaerythritol tetranitrate	27 (≤20)	FTBL-IS-155-071416 FTBL-IS-154-071416	UJ (all non-detects)	A
K1608011/ 8330B	08/02/16	0730000228	Pentaerythritol tetranitrate	32 (≤20)	FTBL-IS-152-071416 FTBL-IS-153-071416 FTBL-IS-151-071416 FTBL-IS-150-071416	UJ (all non-detects)	A

V. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by ADR with the exception of two method blanks for lead and one method blank for pentaerythritol tetranitrate. The associated sample results were not detected or were significantly greater than the concentrations found in the method blanks.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608011/ 6020A	ICB/CCB	Antimony	0.023 ug/L	All soil samples in SDG K1608011

SDG/ Method	Blank ID	Analyte	Maximum Concentration	Associated Samples
K1608011/ 6020A	ICB/CCB	Antimony Beryllium Lead	0.012 ug/L 0.009 ug/L 0.008 ug/L	All water samples in SDG K1608011

Sample concentrations were compared to concentrations detected in the initial or continuing calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks with the following exceptions:

SDG/ Method	Sample	Compound	Reported Concentration	Modified Final Concentration
K1608011/ 6020A	EB071416	Antimony Lead	0.012 ug/L 0.036 ug/L	0.012 ug/L 0.036 ug/L

VI. Field Blanks

One equipment blank was collected and analyzed for metals and explosives. The equipment blank had detections for metals and explosives. The associated sample results were not detected or were significantly greater than the concentrations found in the equipment blank.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met.

The criteria for ICS analysis were met.

VIII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

IX. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of one MS/MSD pair for explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Duplicate Sample Analysis/Triplicate Sample Analysis

Duplicates (DUP) and triplicate (TRP) sample analyses were performed on an associated project sample. Results were within QC limits.

XI. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The percent differences (%D) were within QC limits.

XII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits with the exception of two LCSs for explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Internal Standards

All internal standard areas percent recoveries were within QC limits.

XV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1608011/ 8330B	EEB071416	1,3-Dinitrobenzene Nitrobenzene 2,6-Dinitrotoluene 4-Nitrotoluene 3-Nitrotoluene Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects) NJ (all detects)	A

XVI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to continuing calibration %D and LCS/LCSD %R, data were qualified as estimated in six samples.

Due to MS/MSD %R, data were qualified as estimated in one sample.

Due to results not being confirmed, data were qualified as presumptive and estimated in one

Due to results reported below the LOQ, data were qualified as estimated in one sample.

Due to calibration blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
14-Jul-2016	EB071416	K1608011-007	EB	CLFAA	6020A	S2BVEM
14-Jul-2016	EB071416	K1608011-007	EB	METHOD	8330B	S2BVEM
14-Jul-2016	EB071416RE	K1608011-007RE	EB	CLFAA	6020A	S2BVEM
14-Jul-2016	FTBL-IS-155-071416	K1608011-001	N	EPA 3050B	6020A	S2BVEM
14-Jul-2016	FTBL-IS-155-071416	K1608011-001	N	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-155-071416REP1	KWG1606091-3	REP	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-155-071416REP2	KWG1606091-4	REP	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-155-071416MS	KWG1606091-5	MS	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-155-071416MSD	KWG1606091-6	MSD	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-154-071416	K1608011-002	N	EPA 3050B	6020A	S2BVEM
14-Jul-2016	FTBL-IS-154-071416	K1608011-002	N	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-152-071416	K1608011-003	N	EPA 3050B	6020A	S2BVEM
14-Jul-2016	FTBL-IS-152-071416	K1608011-003	N	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-153-071416	K1608011-004	N	EPA 3050B	6020A	S2BVEM
14-Jul-2016	FTBL-IS-153-071416	K1608011-004	N	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-151-071416	K1608011-005	N	EPA 3050B	6020A	S2BVEM
14-Jul-2016	FTBL-IS-151-071416	K1608011-005	N	METHOD	8330B	S2BVEM
14-Jul-2016	FTBL-IS-150-071416	K1608011-006	N	EPA 3050B	6020A	S2BVEM
14-Jul-2016	FTBL-IS-150-071416	K1608011-006	N	METHOD	8330B	S2BVEM

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: METALS

Method: 6020A

Matrix: Water

Sample ID: EB071416 Collected: 7/14/2016 12:00:00 AM Analysis Type: Initial/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.012	J	0.012	LOD	0.050	LOQ	ug/L	U	Cb
NICKEL	0.14	J	0.05	LOD	0.20	LOQ	ug/L	J	RI
LEAD	0.036	=	0.010	LOD	0.020	LOQ	ug/L	U	Cb

Sample ID: EB071416RE Collected: 7/14/2016 12:00:00 AM Analysis Type: Reanalysis-1/TOT Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	0.3	J	0.5	LOD	0.5	LOQ	ug/L	J	RI

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-150-071416 Collected: 7/14/2016 2:55:00 PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ccv
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-151-071416 Collected: 7/14/2016 1:45:00 PM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ccv
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-152-071416 Collected: 7/14/2016 11:30:00 AM Analysis Type: Initial Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 12:27:34 PM

ADR version 1.9.0.325

Page 1 of 4

Data Qualifier Summary

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-152-071416 **Collected:** 7/14/2016 11:30:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Ccv
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-153-071416 **Collected:** 7/14/2016 12:40:00 PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Ccv
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-154-071416 **Collected:** 7/14/2016 10:30:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ccv
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-155-071416 **Collected:** 7/14/2016 9:00:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
3,5-Dinitroaniline	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ccv
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 12:27:34 PM

ADR version 1.9.0.325

Page 2 of 4

Data Qualifier Summary

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA
Method: 8330B **Matrix:** Water

Sample ID: EB071416		7/14/2016 12:00:00 Collected: AM		Analysis Type: Initial/TOT			Dilution: 1		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.19	N	0.10	LOD	0.10	LOQ	ug/L	NJ	ProfJudg
2,6-DINITROTOLUENE	0.11	JN	0.20	LOD	0.20	LOQ	ug/L	NJ	RI, Lcs, ProfJudg
3-NITROTOLUENE	0.20	N	0.10	LOD	0.10	LOQ	ug/L	NJ	Lcs, ProfJudg
4-NITROTOLUENE	0.051	JN	0.10	LOD	0.10	LOQ	ug/L	NJ	RI, ProfJudg
NITROBENZENE	0.46	N	0.10	LOD	0.10	LOQ	ug/L	NJ	ProfJudg
NITROGLYCERIN	2.1	N	1.0	LOD	1.0	LOQ	ug/L	NJ	ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 12:27:34 PM

ADR version 1.9.0.325

Page 3 of 4

Data Qualifier Summary

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Cb	Calibration Blank Contamination
Ccv	Continuing Calibration Verification Percent Difference Lower Estimation
Lcs	Laboratory Control Spike Lower Estimation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 12:27:34 PM

ADR version 1.9.0.325

Page 4 of 4

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1608011

Method Blank Outlier Report

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1609083-01	8/17/2016 8:55:00 PM	LEAD	0.017 mg/Kg	FTBL-IS-150-071416 FTBL-IS-151-071416 FTBL-IS-152-071416 FTBL-IS-153-071416 FTBL-IS-154-071416 FTBL-IS-155-071416

Method: 6020A				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1608449-01	8/3/2016 2:41:00 PM	LEAD	0.007 ug/L	EB071416

Method: 8330B				
Matrix: Water				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1605917-4	7/27/2016 10:19:00 PM	Pentaerythritol Tetranitrate (PETN)	6.1 ug/L	EB071416

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 10:48:20 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-155-071416MSD (FTBL-IS-155-071416)	2-AMINO-4,6-DINITROTOLUENE 4-Amino-2,6-Dinitrotoluene Tetryl	- - -	- - -	71.00-123.00 64.00-127.00 68.00-135.00	22 (20.00) 22 (20.00) 23 (20.00)	2-AMINO-4,6-DINITROTOLUENE 4-Amino-2,6-Dinitrotoluene Tetryl	J (all detects)
FTBL-IS-155-071416MS FTBL-IS-155-071416MSD (FTBL-IS-155-071416)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX NITROGLYCERIN RDX	- 78 82 - - -	72 65 65 59 70 61	80.00-116.00 79.00-117.00 86.00-118.00 74.00-124.00 73.00-124.00 67.00-129.00	- - 23 (20.00) 23 (20.00) 23 (20.00) 21 (20.00)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX NITROGLYCERIN RDX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 10:48:22 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1606091-2 KWG1606091-7 (FTBL-IS-150-071416 FTBL-IS-151-071416 FTBL-IS-152-071416 FTBL-IS-153-071416 FTBL-IS-154-071416 FTBL-IS-155-071416)	2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX Tetryl	69 73 73 53	- - - -	79.00-117.00 86.00-118.00 74.00-124.00 68.00-135.00	- - - -	2,6-DINITROTOLUENE 3,5-Dinitroaniline HMX Tetryl	J(all detects) UJ(all non-detects)

Method: 8330B

Matrix: Water

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1605917-3 (EB071416)	2,6-DINITROTOLUENE 3-NITROTOLUENE	68 72	- -	77.00-127.00 73.00-125.00	- -	2,6-DINITROTOLUENE 3-NITROTOLUENE	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 10:48:23 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1608011

Laboratory: ALS_K

EDD Filename: K1608011_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB071416	ANTIMONY	J	0.012	0.050	LOQ	ug/L	J (all detects)
	NICKEL	J	0.14	0.20	LOQ	ug/L	J (all detects)
EB071416RE	ZINC	J	0.3	0.5	LOQ	ug/L	J (all detects)

Method: 8330B
Matrix: Water

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB071416	2,6-DINITROTOLUENE	JN	0.11	0.20	LOQ	ug/L	J (all detects)
	4-NITROTOLUENE	JN	0.051	0.10	LOQ	ug/L	J (all detects)

Project Name and Number: 06261038..0001.00400 - Closed Castner Firing Range

9/15/2016 10:48:25 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37038A4a
 SDG #: K1608011
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 7/14/16
 Page: 1 of 1
 Reviewer: *SN*
 2nd Reviewer: *SN*

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	EB=7
VII.	Matrix Spike/Matrix Spike Duplicates	N	CS
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	(7)
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-155-071416	K1608011-001	Soil	07/14/16
2	FTBL-IS-154-071416	K1608011-002	Soil	07/14/16
3	FTBL-IS-152-071416	K1608011-003	Soil	07/14/16
4	FTBL-IS-153-071416	K1608011-004	Soil	07/14/16
5	FTBL-IS-151-071416	K1608011-005	Soil	07/14/16
6	FTBL-IS-150-071416	K1608011-006	Soil	07/14/16
7	EB071416	K1608011-007	Water	07/14/16
8				
9				
10				
11				
12				
13				

Notes: _____

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: 

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dil

2nd Reviewer: 

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: All Soil

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (>5x)									
Sb		0.023	0.0575										

Sample Concentration units, unless otherwise noted: ug/L

Associated Samples: All Water

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	7									
Sb		0.012	0.06	0.012									
Be		0.009	0.045										
Pb		0.008	0.04	0.036									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 37038A40
SDG #: K1608011
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 9/13/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	W	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	EB = 7 (ND = ND)
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N/A	
VIII.	Laboratory control samples	N	SM = KW 1606091-2
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-155-071416	K1608011-001	Soil	07/14/16
2	FTBL-IS-154-071416	K1608011-002	Soil	07/14/16
3	FTBL-IS-152-071416	K1608011-003	Soil	07/14/16
4	FTBL-IS-153-071416	K1608011-004	Soil	07/14/16
5	FTBL-IS-151-071416	K1608011-005	Soil	07/14/16
6	FTBL-IS-150-071416	K1608011-006	Soil	07/14/16
7	EB071416	K1608011-007	Water	07/14/16
8	FTBL-IS-155-071416MS	K1608011-001MS	Soil	07/14/16
9	FTBL-IS-155-071416MSD	K1608011-001MSD	Soil	07/14/16
10	FTBL-IS-155-071416DUP	K1608011-001DUP	Soil	07/14/16
11	FTBL-IS-155-071416TRP	K1608011-001TRP	Soil	07/14/16
12				
13				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141 (Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. 3,5-Dinitroaniline		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 370-38A40

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

Page: 1 of 1
Reviewer: Q

METHOD: GC ☒ HPLC

2nd Reviewer: 

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N/A Were continuing calibration standards analyzed at the required frequencies?

Y(N) N/A	Did the continuing calibration standards meet the %D validation criteria of $\leq 20.0\%$?
----------	---

Level IV Only

Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

[illegible]

LDC #: 37038A40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: 4

2nd Reviewer: 

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y	N	N/A
---	--------------	----------------

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

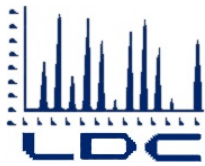
Y	N	N/A
---	---	-----

Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

January 10, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 21, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37784:

<u>SDG #</u>	<u>Fraction:</u>
K1613238, K1613587 K1613698, K1613914	Metals, Explosives

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

**Data Validation Report
Fort Bliss, Castner Range**

**SDGs: K1613238, K1613587, K1613698, and
K1613914**

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

January 9, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the October through November 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the EPA CLPNFG for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Arsenic and Lead by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), laboratory blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), laboratory triplicate samples (TRP), and standard reference materials (SRM), and field triplicates.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, calibration blanks, interference check samples, and serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met with the exception of twenty six samples for explosives. Due to exceed holding times, 30 explosive results were qualified as estimated (J) or non-detected estimated (UJ). The details regarding the qualification of data are provided in Enclosure I.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of eight blanks for several explosives. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank were not qualified. The details regarding the qualification of data are provided in Enclosure I.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the exception of one sample for explosives. The associated sample results were qualified as detected estimated (J) as applicable. The details regarding the qualification of data are provided in Enclosure I.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives in three MS/MSD pairs and lead in one MS/MSD pair. The associated sample results were qualified as detected estimated (J) or non-detected

pair. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details are provided in Enclosures I and II.

IX. Triplicate Sample Analysis

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

XI. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the exception of three LCS for several explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of six SRM samples for several explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XII. Field Triplicates

Three sets of field triplicates were collected and analyzed for explosives. No explosives were detected in the field triplicates. The field triplicates are identified in Attachment 1

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613238/ 8330B	FTBL-IS-012-102816R FTBL-IS-010-102816R FTBL-IS-009-102816R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613587/ 8330B	FTBL-IS-106-110316RRE FTBL-IS-110-110316R FTBL-IS-125-110316RRE FTBL-IS-105-110316RRE	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613587/ 8330B	FTBL-IS-105-110316R	4-Amino-2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613587/ 8330B	FTBL-IS-106-110316R	Nitrobenzene 2-Amino-4,6-Dinitrotoluene 4-Amino-2,6-Dinitrotoluene 2-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613914/ 8330B	FTBL-IS-069-111116R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613914/ 8330B	FTBL-IS-099-111116R	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613914/ 8330B	FTBL-IS-079-111116R	3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

SDG/ Method	Sample	Compound	RPD	Flag	A or P
K1613587/ 8330B	FTBL-IS-105-110316R	2-Amino-4,6-Dinitrotoluene	147.8	J (all detects)	A
K1613914/ 8330B	FTBL-IS-088-111116R	Nitrobenzene	105	J (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed unusable as follows:

SDG/ Method	Sample	Compound	Flag	A or P
K1613238/ 8330B	FTBL-IS-084-102716RRE FTBL-IS-085-102716RRE FTBL-IS-011-102816RRE FTBL-IS-012-102816RRE FTBL-IS-010-102816RRE FTBL-IS-009-102816RRE	All TCL compounds	R	A
K1613587/ 8330B	FTBL-IS-135-110316A-R FFTBL-IS-135-110316B-R FTBL-IS-135-110316C-R FTBL-IS-138-110316R** FTBL-IS-128-110316R FTBL-IS-124-110316R FTBL-IS-125-110316R FTBL-IS-105-110316R FTBL-IS-106-110316R FTBL-IS-110-110316R	Tetryl	R	A
K1613587/ 8330B	FTBL-IS-135-110316A-RRE FTBL-IS-135-110316B-RRE FTBL-IS-135-110316C-RRE FTBL-IS-138-110316RRE FTBL-IS-128-110316RRE FTBL-IS-124-110316RRE FTBL-IS-125-110316RRE FTBL-IS-105-110316RRE FTBL-IS-106-110316RRE FTBL-IS-110-110316RRE	All TCL compounds except Tetryl	R	A
K1613698/ 8330B	FTBL-IS-015-110716R FTBL-IS-016-110716R FTBL-IS-019-110716R FTBL-IS-008-110716R FTBL-IS-021-110716R FTBL-IS-020-110716R FTBL-IS-023-110716R FTBL-IS-022-110716R FTBL-IS-006-110716R FTBL-IS-102-110716R	1,3,5-Trinitrotoluene Tetryl	R	A
K1613698/ 8330B	FTBL-IS-015-110716RRE FTBL-IS-016-110716RRE FTBL-IS-019-110716RRE FTBL-IS-008-110716RRE FTBL-IS-021-110716RRE FTBL-IS-020-110716RRE FTBL-IS-023-110716RRE FTBL-IS-022-110716RRE FTBL-IS-006-110716RRE FTBL-IS-102-110716RRE	All TCL compounds except 1,3,5-Trinitrotoluene Tetryl	R	A

Due to severe holding time exceedances, data were qualified as rejected in 20 samples.

Due to surrogate %R, data were qualified as estimated in one sample.

Due to MS/MSD %R and RPD exceedances, data were qualified as estimated in four samples.

Due to LCS and SRM %R exceedances, data were qualified as estimated in forty-seven samples.

Due to results below the LOQ, data were qualified as estimated in fourteen samples.

Due to results not being confirmed, data were qualified as presumptive in nine samples.

Due to RPD between two columns, data were qualified as estimated in two samples.

Due to laboratory blank contamination, data were qualified as non-detect in two samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
27-Oct-2016	FTBL-IS-084-102716R	K1613238-001	N	METHOD	8330B	III
27-Oct-2016	FTBL-IS-084-102716RRE	K1613238-001RE	N	EPA 3535A	8330B	III
27-Oct-2016	FTBL-IS-084-102716RREP1	KWG1610099-1	REP	METHOD	8330B	III
27-Oct-2016	FTBL-IS-084-102716RMS	KWG1610099-11	MS	METHOD	8330B	III
27-Oct-2016	FTBL-IS-084-102716RMSD	KWG1610099-12	MSD	METHOD	8330B	III
27-Oct-2016	FTBL-IS-084-102716RREP5	KWG1610099-3	REP	METHOD	8330B	III
27-Oct-2016	FTBL-IS-084-102716RREP3	KWG1610997-1	REP	EPA 3535A	8330B	III
27-Oct-2016	FTBL-IS-084-102716RREP7	KWG1610997-2	REP	EPA 3535A	8330B	III
27-Oct-2016	FTBL-IS-084-102716RMS	KWG1610997-3	MS	EPA 3535A	8330B	III
27-Oct-2016	FTBL-IS-084-102716RMSD	KWG1610997-4	MSD	EPA 3535A	8330B	III
27-Oct-2016	FTBL-IS-085-102716R	K1613238-002	N	METHOD	8330B	III
27-Oct-2016	FTBL-IS-085-102716RRE	K1613238-002RE	N	EPA 3535A	8330B	III
28-Oct-2016	FTBL-IS-011-102816R	K1613238-003	N	METHOD	8330B	III
28-Oct-2016	FTBL-IS-011-102816RRE	K1613238-003RE	N	EPA 3535A	8330B	III
28-Oct-2016	FTBL-IS-012-102816R	K1613238-004	N	METHOD	8330B	III
28-Oct-2016	FTBL-IS-012-102816RRE	K1613238-004RE	N	EPA 3535A	8330B	III
28-Oct-2016	FTBL-IS-010-102816R	K1613238-005	N	METHOD	8330B	III
28-Oct-2016	FTBL-IS-010-102816RRE	K1613238-005RE	N	EPA 3535A	8330B	III
28-Oct-2016	FTBL-IS-009-102816R	K1613238-006	N		9045D	III
28-Oct-2016	FTBL-IS-009-102816R	K1613238-006	N	METHOD	8330B	III
28-Oct-2016	FTBL-IS-009-102816RREP1	K1613238-006DUP	REP		9045D	III
28-Oct-2016	FTBL-IS-009-102816RRE	K1613238-006RE	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-R	K1613587-001	FT	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RRE	K1613587-001RE	FT	METHOD	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RREP2	KWG1610389-1	REP	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RREP5	KWG1610389-2	REP	EPA 3535A	8330B	III

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MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Nov-2016	FTBL-IS-135-110316A-RMS	KWG1610389-3	MS	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RMSD	KWG1610389-4	MSD	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RREP4	KWG1610885-1	REP	METHOD	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RREP1	KWG1610885-2	REP	METHOD	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RMS	KWG1610885-3	MS	METHOD	8330B	III
03-Nov-2016	FTBL-IS-135-110316A-RMSD	KWG1610885-4	MSD	METHOD	8330B	III
03-Nov-2016	FTBL-IS-128-110316R	K1613587-005	N		9045D	III
03-Nov-2016	FTBL-IS-128-110316R	K1613587-005	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-128-110316RRE	K1613587-005RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-135-110316B-R	K1613587-002	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-135-110316B-RRE	K1613587-002RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-124-110316R	K1613587-006	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-124-110316RRE	K1613587-006RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-125-110316R	K1613587-007	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-125-110316RRE	K1613587-007RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-135-110316C-R	K1613587-003	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-135-110316C-RRE	K1613587-003RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-105-110316R	K1613587-008	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-105-110316RRE	K1613587-008RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-138-110316R	K1613587-004	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-138-110316RRE	K1613587-004RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-106-110316R	K1613587-009	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-106-110316RRE	K1613587-009RE	N	METHOD	8330B	III
03-Nov-2016	FTBL-IS-110-110316R	K1613587-010	N	EPA 3050B	6020A	IV
03-Nov-2016	FTBL-IS-110-110316R	K1613587-010	N	EPA 3535A	8330B	III
03-Nov-2016	FTBL-IS-110-110316RRE	K1613587-010RE	N	METHOD	8330B	III

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Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
03-Nov-2016	FTBL-IS-110-110316RMS	KQ1615740-03	MS	EPA 3050B	6020A	IV
03-Nov-2016	FTBL-IS-110-110316RMSD	KQ1615740-04	MSD	EPA 3050B	6020A	IV
07-Nov-2016	FTBL-IS-015-110716R	K1613698-001	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RRE	K1613698-001RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RREP1	KWG1610465-1	REP	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RREP4	KWG1610465-2	REP	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RMS	KWG1610465-3	MS	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RMSD	KWG1610465-4	MSD	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RREP3	KWG1610896-1	REP	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RREP5	KWG1610896-2	REP	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RMS	KWG1610896-3	MS	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-015-110716RMSD	KWG1610896-4	MSD	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-016-110716R	K1613698-002	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-016-110716RRE	K1613698-002RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-008-110716R	K1613698-004	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-008-110716RRE	K1613698-004RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-019-110716R	K1613698-003	N	EPA 3050B	6020A	III
07-Nov-2016	FTBL-IS-019-110716R	K1613698-003	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-019-110716RRE	K1613698-003RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-021-110716R	K1613698-005	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-021-110716RRE	K1613698-005RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-006-110716R	K1613698-009	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-006-110716RRE	K1613698-009RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-020-110716R	K1613698-006	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-020-110716RRE	K1613698-006RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-023-110716R	K1613698-007	N	EPA 3535A	8330B	III

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Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Nov-2016	FTBL-IS-023-110716RRE	K1613698-007RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-022-110716R	K1613698-008	N	EPA 3050B	6020A	III
07-Nov-2016	FTBL-IS-022-110716R	K1613698-008	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-022-110716RRE	K1613698-008RE	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-102-110716R	K1613698-010	N	EPA 3535A	8330B	III
07-Nov-2016	FTBL-IS-102-110716RRE	K1613698-010RE	N	EPA 3535A	8330B	III
11-Nov-2016	FTBL-IS-097-111116A-R	K1613914-001	FT	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-097-111116A-RREP1	KWG1610697-1	REP	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-097-111116A-RREP3	KWG1610697-2	REP	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-097-111116A-RMS	KWG1610697-3	MS	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-097-111116A-RMSD	KWG1610697-4	MSD	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-098-111116-R	K1613914-004	N	EPA 3050B	6020A	III
11-Nov-2016	FTBL-IS-098-111116-R	K1613914-004	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-099-111116-R	K1613914-007	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-097-111116B-R	K1613914-002	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-097-111116C-R	K1613914-003	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-069-111116-R	K1613914-011	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-088-111116-R	K1613914-005	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-063-111116-R	K1613914-010	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-081-111116-R	K1613914-006	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-068-111116-R	K1613914-009	N	METHOD	8330B	IV
11-Nov-2016	FTBL-IS-079-111116-R	K1613914-008	N	METHOD	8330B	IV

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Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613238

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-009-102816R
 Collected: PM 10/28/2016 2:40:

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0084	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-009-102816R
 Collected: PM 10/28/2016 2:40:

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-009-102816RRE
 Collected: PM 10/28/2016 2:40:

Analysis Type: Reanalysis-11

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 1 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613238

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-009-102816RRE Collected: PM 10/28/2016 2:40: Analysis Type: Reanalysis-11 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-009-102816RRE Collected: PM 10/28/2016 2:40: Analysis Type: Reanalysis-12 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

Sample ID: FTBL-IS-010-102816R Collected: PM 10/28/2016 12:51: Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0066	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 2 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613238

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-010-102816R **Collected:** PM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-010-102816R **Collected:** PM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-010-102816RRE **Collected:** PM **Analysis Type:** Reanalysis-11 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.086	JN	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs, Mb, StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-010-102816RRE **Collected:** PM **Analysis Type:** Reanalysis-12 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 3 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613238

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-011-102816R
 Collected: AM 10/28/2016 8:20:

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.023	U,i	0.023	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-011-102816R
 Collected: AM 10/28/2016 8:20:

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-011-102816RRE
 Collected: AM 10/28/2016 8:20:

Analysis Type: Reanalysis-11

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	Lcs, StoE, ProfJdg
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	Lcs, StoE, ProfJdg

Sample ID: FTBL-IS-011-102816RRE
 Collected: AM 10/28/2016 8:20:

Analysis Type: Reanalysis-12

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJdg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 4 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613238

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-011-102816RRE Collected: AM 10/28/2016 8:20:

Analysis Type: Reanalysis-12

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-012-102816R Collected: AM 10/28/2016 10:31

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0074	JN	0.020	LOD	0.079	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 5 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613238

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

10/28/2016 10:31

Sample ID: FTBL-IS-012-102816R **Collected:** AM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

10/28/2016 10:31

Sample ID: FTBL-IS-012-102816R **Collected:** AM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

10/28/2016 10:31

Sample ID: FTBL-IS-012-102816RRE **Collected:** AM **Analysis Type:** Reanalysis-11 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

10/28/2016 10:31

Sample ID: FTBL-IS-012-102816RRE **Collected:** AM **Analysis Type:** Reanalysis-12 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 6 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613238

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-084-102716R

Collected: AM

10/27/2016 11:31

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

Sample ID: FTBL-IS-084-102716R

Collected: AM

10/27/2016 11:31

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
2,6-DINITROTOLUENE	0.027	U,i	0.027	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

Sample ID: FTBL-IS-084-102716RRE

Collected: AM

10/27/2016 11:31

Analysis Type: Reanalysis-11

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 7 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613238

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-084-102716RRE **Collected:** AM **Analysis Type:** Reanalysis-11 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-084-102716RRE **Collected:** AM **Analysis Type:** Reanalysis-12 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

Sample ID: FTBL-IS-085-102716R **Collected:** PM **Analysis Type:** Initial1 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-085-102716R **Collected:** PM **Analysis Type:** Initial2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 8 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613238

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-085-102716R
 Collected: PM 10/27/2016 1:55:

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-085-102716RRE
 Collected: PM 10/27/2016 1:55:

Analysis Type: Reanalysis-11

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-085-102716RRE
 Collected: PM 10/27/2016 1:55:

Analysis Type: Reanalysis-12

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:22 PM

ADR version 1.9.0.325

Page 9 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-110-110316R **Collected:** PM **11/3/2016 2:50:0**

Analysis Type: Initial

Dilution: 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
LEAD	66.2	=	0.051	LOD	0.051	LOQ	mg/Kg	J	Ms

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-105-110316R **Collected:** PM **11/3/2016 1:00:0**

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.022	U,i	0.022	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.0087	JP	0.021	LOD	0.041	LOQ	mg/Kg	J	RI, ProfJudg
2-NITROTOLUENE	0.0092	J	0.021	LOD	0.081	LOQ	mg/Kg	J	RI
4-Amino-2,6-Dinitrotoluene	0.014	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
NITROBENZENE	0.014	J	0.021	LOD	0.081	LOQ	mg/Kg	J	RI
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-105-110316RRE **Collected:** PM **11/3/2016 1:00:0**

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 10 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613587

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-105-110316RRE **Collected:** PM 11/3/2016 1:00:0

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.012	JN	0.020	LOD	0.080	LOQ	mg/Kg	R	RI, StoE, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs, StoE

Sample ID: FTBL-IS-106-110316R **Collected:** PM 11/3/2016 1:45:0

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U,i	0.021	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.013	JN	0.020	LOD	0.040	LOQ	mg/Kg	NJ	RI, Surr, ProfJudg
2-NITROTOLUENE	0.015	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, Surr, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.017	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, Surr, ProfJudg
NITROBENZENE	0.012	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, Surr, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-106-110316RRE **Collected:** PM 11/3/2016 1:45:0

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 11 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/3/2016 1:45:0

Sample ID: FTBL-IS-106-110316RRE

Collected: PM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.016	JN	0.021	LOD	0.081	LOQ	mg/Kg	R	RI, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, StoE

11/3/2016 2:50:0

Sample ID: FTBL-IS-110-110316R

Collected: PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.042	U	0.042	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.014	JN	0.021	LOD	0.083	LOQ	mg/Kg	NJ	RI, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	R	Lcs, ProfJudg

11/3/2016 2:50:0

Sample ID: FTBL-IS-110-110316RRE

Collected: PM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
1,3-DINITROBENZENE	0.042	U	0.042	LOD	0.042	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 12 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-110-110316RRE Collected: PM 11/3/2016 2:50:0 Analysis Type: Reanalysis-1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	UJ	Lcs, StoE

Sample ID: FTBL-IS-124-110316R Collected: AM 11/3/2016 10:40: Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.088	=	0.040	LOD	0.080	LOQ	mg/Kg	J	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-124-110316RRE Collected: AM 11/3/2016 10:40: Analysis Type: Reanalysis-1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 13 of 34

Data Qualifier Summary

Laboratory: ALS_K

K1613914
EDD Filename: K1613238_SEDD2A_rev,
K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
K1613914_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-124-110316RRE Collected: AM 11/3/2016 10:40:

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs, StoE

Sample ID: FTBL-IS-125-110316R Collected: AM 11/3/2016 11:30:

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-125-110316RRE Collected: AM 11/3/2016 11:30:

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 14 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613587

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-125-110316RRE Collected: AM 11/3/2016 11:30: Analysis Type: Reanalysis-1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.0085	JN	0.021	LOD	0.081	LOQ	mg/Kg	R	RI, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, StoE

Sample ID: FTBL-IS-128-110316R Collected: AM 11/3/2016 9:40: Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-128-110316RRE Collected: AM 11/3/2016 9:40: Analysis Type: Reanalysis-1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 15 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/3/2016 9:40:0

Sample ID: FTBL-IS-128-110316RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, StoE

11/3/2016 8:30:0

Sample ID: FTBL-IS-135-110316A-R

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Ms, Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.075	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.038	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.020	U	0.020	LOD	0.038	LOQ	mg/Kg	UJ	Ms
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, ProfJudg

11/3/2016 8:30:0

Sample ID: FTBL-IS-135-110316A-RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 16 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/3/2016 8:30:0

Sample ID: FTBL-IS-135-110316A-RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, StoE

11/3/2016 10:30:

Sample ID: FTBL-IS-135-110316B-R

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

11/3/2016 10:30:

Sample ID: FTBL-IS-135-110316B-RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 17 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-135-110316B-RRE Collected: AM 11/3/2016 10:30:

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, StoE

Sample ID: FTBL-IS-135-110316C-R Collected: PM 11/3/2016 12:00:

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-135-110316C-RRE Collected: PM 11/3/2016 12:00:

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 18 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-135-110316C-RRE
 Collected: PM 11/3/2016 12:00:

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, StoE

Sample ID: FTBL-IS-138-110316R
 Collected: PM 11/3/2016 1:40:0

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-138-110316R
 Collected: PM 11/3/2016 1:40:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.015	J	0.021	LOD	0.081	LOQ	mg/Kg	J	RI
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 19 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613587

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-138-110316RRE
Collected: PM 11/3/2016 1:40:0

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, StoE

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-006-110716R
Collected: AM 11/7/2016 11:40:0

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 20 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/7/2016 11:40:
 Sample ID: FTBL-IS-006-110716R Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

11/7/2016 11:40:
 Sample ID: FTBL-IS-006-110716RRE Collected: AM Analysis Type: Reanalysis-1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	StoE

11/7/2016 10:05:
 Sample ID: FTBL-IS-008-110716R Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 21 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/7/2016 10:05:

Sample ID: FTBL-IS-008-110716R

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs, ProfJudg

11/7/2016 10:05:

Sample ID: FTBL-IS-008-110716RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	StoE

11/7/2016 8:15:0

Sample ID: FTBL-IS-015-110716R

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Ms, Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 22 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-015-110716R

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Ms, Lcs, ProfJudg

Sample ID: FTBL-IS-015-110716RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 23 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613698

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-016-110716R **Collected:** AM **11/7/2016 9:15:0**

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-016-110716RRE **Collected:** AM **11/7/2016 9:15:0**

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 24 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/7/2016 10:15:

Sample ID: FTBL-IS-019-110716R

Collected: AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

11/7/2016 10:15:

Sample ID: FTBL-IS-019-110716RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 25 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613698

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-020-110716R
 Collected: PM 11/7/2016 12:15:

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-020-110716RRE
 Collected: PM 11/7/2016 12:15:

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 26 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-021-110716R

Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-021-110716RRE

Collected: AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 27 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-022-110716R

Collected: PM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-022-110716RRE

Collected: PM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 28 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-023-110716R Collected: PM 11/7/2016 1:00:0

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-023-110716RRE Collected: PM 11/7/2016 1:00:0

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 29 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613698

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-102-110716R

Collected: PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs, ProfJudg

Sample ID: FTBL-IS-102-110716RRE

Collected: PM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	Lcs, StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	StoE

SDG: K1613914

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 30 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613914

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-063-111116-R Collected: AM 11/11/2016 11:31 Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-068-111116-R Collected: PM 11/11/2016 12:31 Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-069-111116-R Collected: AM 11/11/2016 10:41 Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.0098	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-079-111116-R Collected: PM 11/11/2016 12:41 Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-079-111116-R Collected: PM 11/11/2016 12:41 Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.023	JN	0.041	LOD	0.081	LOQ	mg/Kg	U	Mb, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 31 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev
 SDG: K1613914

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-081-111116-R Collected: AM 11/11/2016 11:41 Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-088-111116-R Collected: AM 11/11/2016 10:41 Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.0047	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-088-111116-R Collected: AM 11/11/2016 10:41 Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-097-111116A-R Collected: AM 11/11/2016 8:00 Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-097-111116B-R Collected: AM 11/11/2016 9:00 Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 32 of 34

Data Qualifier Summary

K1613914
 EDD Filename: K1613238_SEDD2A_rev,
 K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
 K1613914_SEDD2A_rev

Laboratory: ALS_K

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613914

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/11/2016 9:40:
 Sample ID: FTBL-IS-097-111116C-R Collected: AM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

11/11/2016 8:30:
 Sample ID: FTBL-IS-098-111116-R Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.017	J	0.021	LOD	0.081	LOQ	mg/Kg	J	RI
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

11/11/2016 8:50:
 Sample ID: FTBL-IS-099-111116-R Collected: AM Analysis Type: Initial1 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.0099	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg
NITROBENZENE	0.013	J	0.021	LOD	0.081	LOQ	mg/Kg	J	RI
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 33 of 34

Data Qualifier Summary

K1613914
EDD Filename: K1613238_SEDD2A_rev,
K1613587_SEDD2A_rev, K1613698_SEDD2A_rev,
K1613914_SEDD2A_rev

Laboratory: ALS_K
eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Estimation
StoE	Sampling to Extraction Rejection
Surr	Surrogate/Tracer Recovery Upper Estimation

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 1:02:23 PM

ADR version 1.9.0.325

Page 34 of 34

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1613238

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: K1613238
EDD Filename: K1613238_SEDD2A

Laboratory: ALS_K
eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B Preparation Method: EPA 3535A
Matrix: Soil

Sample ID	Type	Actual	Criteria	Units	Flag
FTBL-IS-009-102816RRE (Reanalysis)	Sampling To Extraction	43.00	14.00	DAYS	J (all detects) R (all non-detects)
FTBL-IS-009-102816RRE (Reanalysis)		43.00	14.00	DAYS	
FTBL-IS-010-102816RRE (Reanalysis)		43.00	14.00	DAYS	
FTBL-IS-010-102816RRE (Reanalysis)		43.00	14.00	DAYS	
FTBL-IS-011-102816RRE (Reanalysis)		43.00	14.00	DAYS	
FTBL-IS-011-102816RRE (Reanalysis)		43.00	14.00	DAYS	
FTBL-IS-012-102816RRE (Reanalysis)		43.00	14.00	DAYS	
FTBL-IS-012-102816RRE (Reanalysis)		43.00	14.00	DAYS	
FTBL-IS-084-102716RMS (Initial)		44.00	14.00	DAYS	
FTBL-IS-084-102716RMSD (Initial)		44.00	14.00	DAYS	
FTBL-IS-084-102716RRE (Reanalysis)		44.00	14.00	DAYS	
FTBL-IS-084-102716RRE (Reanalysis)		44.00	14.00	DAYS	
FTBL-IS-084-102716RREP3 (Initial2)		44.00	14.00	DAYS	
FTBL-IS-084-102716RREP3 (Initial1)		44.00	14.00	DAYS	
FTBL-IS-084-102716RREP7 (Initial2)		44.00	14.00	DAYS	
FTBL-IS-084-102716RREP7 (Initial1)		44.00	14.00	DAYS	
FTBL-IS-085-102716RRE (Reanalysis)		44.00	14.00	DAYS	
FTBL-IS-085-102716RRE (Reanalysis)		44.00	14.00	DAYS	

Project Name and Number: 06261038.0001.00400 -

1/5/2017 12:43:13 PM

ADR version 1.9.0.325

Page 1 of 1

Method Blank Outlier Report

Lab Reporting Batch ID: K1613238

Laboratory: ALS_K

EDD Filename: K1613238_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610099-5	11/19/2016 9:16:00 AM	3-NITROTOLUENE	0.083 mg/Kg	FTBL-IS-009-102816R FTBL-IS-010-102816R FTBL-IS-011-102816R FTBL-IS-012-102816R FTBL-IS-084-102716R FTBL-IS-085-102716R
KWG1610997-7	12/19/2016 4:19:00 PM	3-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	0.24 mg/Kg 0.0084 mg/Kg 0.058 mg/Kg 0.12 mg/Kg	FTBL-IS-009-102816RRE FTBL-IS-010-102816RRE FTBL-IS-011-102816RRE FTBL-IS-012-102816RRE FTBL-IS-084-102716RRE FTBL-IS-085-102716RRE

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-010-102816RRE(Reanalysis-11)	NITROGLYCERIN	0.086 mg/Kg	0.086U mg/Kg

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:15 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613238

Laboratory: ALS_K

EDD Filename: K1613238_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-084-102716RMS	1,3,5-TRINITROBENZENE	39	77	80.00-116.00	67 (20.00)	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
FTBL-IS-084-102716RMSD	1,3-DINITROBENZENE	51	-	73.00-119.00	44 (20.00)	1,3-DINITROBENZENE	
(FTBL-IS-084-102716R)	2,4,6-TRINITROTOLUENE	47	-	71.00-120.00	51 (20.00)	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	52	-	75.00-121.00	48 (20.00)	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	54	73	79.00-117.00	30 (20.00)	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	52	-	71.00-123.00	42 (20.00)	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	45	-	70.00-124.00	45 (20.00)	2-NITROTOLUENE	
	3-NITROTOLUENE	50	-	67.00-129.00	37 (20.00)	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	50	-	64.00-127.00	41 (20.00)	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	48	-	71.00-124.00	42 (20.00)	4-NITROTOLUENE	
	HMX	45	68	74.00-124.00	41 (20.00)	HMX	
	NITROBENZENE	46	-	67.00-129.00	45 (20.00)	NITROBENZENE	
	NITROGLYCERIN	60	-	73.00-124.00	38 (20.00)	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	56	-	72.00-128.00	36 (20.00)	Pentaerythritol Tetranitrate (PETN)	
	RDX	48	-	67.00-129.00	43 (20.00)	RDX	
	Tetryl	33	-	68.00-135.00	78 (20.00)	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:18 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613238

Laboratory: ALS_K

EDD Filename: K1613238_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610099-13 KWG1610099-7 (FTBL-IS-009-102816R FTBL-IS-010-102816R FTBL-IS-011-102816R FTBL-IS-012-102816R FTBL-IS-084-102716R FTBL-IS-085-102716R)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX Tetryl	18 38 30 43 48 46 42 45 44 43 46 40 50 50 50 13	- - - - - - - - - - - - - - - -	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00 68.00-135.00	- - - - - - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX Tetryl	J (all detects) UJ (all non-detects)
KWG1610997-5 (FTBL-IS-009-102816RRE FTBL-IS-010-102816RRE FTBL-IS-011-102816RRE FTBL-IS-012-102816RRE FTBL-IS-084-102716RRE FTBL-IS-085-102716RRE)	NITROBENZENE	8	-	67.00-129.00	-	NITROBENZENE	J(all detects) R(all non-detects)
KWG1610997-5 KWG1610997-6 (FTBL-IS-009-102816RRE FTBL-IS-010-102816RRE FTBL-IS-011-102816RRE FTBL-IS-012-102816RRE FTBL-IS-084-102716RRE FTBL-IS-085-102716RRE)	2-NITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE NITROGLYCERIN	13 29 32 56	- - - -	70.00-124.00 67.00-129.00 71.00-124.00 73.00-124.00	- - - -	2-NITROTOLUENE 3-NITROTOLUENE 4-NITROTOLUENE NITROGLYCERIN	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:20 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613238

Laboratory: ALS_K

EDD Filename: K1613238_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-IS-009-102816R	NITROBENZENE	JN	0.0084	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-010-102816R	NITROBENZENE	JN	0.0066	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-010-102816RRE	NITROGLYCERIN	JN	0.086	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-012-102816R	NITROBENZENE	JN	0.0074	0.079	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:22 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37784A40
SDG #: K1613238
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/8/16
Page: 1 of 2
Reviewer: [Signature]
2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/W	PEs - out of HT
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-084-102716R	K1613238-001	Soil	10/27/16
2	FTBL-IS-084-102716RRE	K1613238-001RE	Soil	10/27/16
3	FTBL-IS-085-102716R	K1613238-002	Soil	10/27/16
4	FTBL-IS-085-102716RRE	K1613238-002RE	Soil	10/27/16
5	FTBL-IS-011-102816R	K1613238-003	Soil	10/28/16
6	FTBL-IS-011-102816RRE	K1613238-003RE	Soil	10/28/16
7	FTBL-IS-012-102816R	K1613238-004	Soil	10/28/16
8	FTBL-IS-012-102816RRE	K1613238-004RE	Soil	10/28/16
9	FTBL-IS-010-102816R	K1613238-005	Soil	10/28/16
10	FTBL-IS-010-102816RRE	K1613238-005RE	Soil	10/28/16
11	FTBL-IS-009-102816R	K1613238-006	Soil	10/28/16
12	FTBL-IS-009-102816RRE	K1613238-006RE	Soil	10/28/16
13	FTBL-IS-084-102716RMS	K1613238-001MS	Soil	10/27/16
14	FTBL-IS-084-102716RMSD	K1613238-001MSD	Soil	10/27/16
15	FTBL-IS-084-102716RDUP	K1613238-001DUP	Soil	10/27/16
16	FTBL-IS-084-102716RTRP	K1613238-001TRP	Soil	10/27/16

LDC #: 37784A40
SDG #: K1613238
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 12/28/16
Page: 2 of 3
Reviewer: [Signature]
2nd Reviewer: _____

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
17	FTBL-IS-084-102716RREMS	K1613238-001REMS	Soil	10/27/16
18	FTBL-IS-084-102716RREMSD	K1613238-001REMSD	Soil	10/27/16
19	FTBL-IS-084-102716RREDUP	K1613238-001REDUP	Soil	10/27/16
20	FTBL-IS-084-102716RRETRP	K1613238-001RETRP	Soil	10/27/16
21				
22				
23				
24				
25				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 377840

VALIDATION FINDINGS WORKSHEET

Overall Assessment of Data

Page: 1 of 1
Reviewer: 9
2nd Reviewer: _____

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

[illegible]

Comments: _____

Quality Control Outlier Reports

K1613587

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: K1613587

Laboratory: ALS_K

EDD Filename: K1613587_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B	Preparation Method: METHOD
Matrix: Soil	

Sample ID	Type	Actual	Criteria	Units	Flag
FTBL-IS-105-110316RRE (Reanalys	Sampling To Extraction	28.00	14.00	DAYS	J (all detects)
FTBL-IS-106-110316RRE (Reanalys		28.00	14.00	DAYS	UJ (all non-detects)
FTBL-IS-110-110316RRE (Reanalys		28.00	14.00	DAYS	
FTBL-IS-124-110316RRE (Reanalys		28.00	14.00	DAYS	
FTBL-IS-125-110316RRE (Reanalys		28.00	14.00	DAYS	
FTBL-IS-128-110316RRE (Reanalys		28.00	14.00	DAYS	
FTBL-IS-135-110316A-RMS (Initial)		28.00	14.00	DAYS	
FTBL-IS-135-110316A-RMSD (Initia		28.00	14.00	DAYS	
FTBL-IS-135-110316A-RRE (Reana		28.00	14.00	DAYS	
FTBL-IS-135-110316A-RREP1 (Initi		28.00	14.00	DAYS	
FTBL-IS-135-110316A-RREP4 (Initi		28.00	14.00	DAYS	
FTBL-IS-135-110316B-RRE (Reana		28.00	14.00	DAYS	
FTBL-IS-135-110316C-RRE (Reana		28.00	14.00	DAYS	
FTBL-IS-138-110316RRE (Reanalys		28.00	14.00	DAYS	

Project Name and Number: 06261038.0001.00400 -

1/5/2017 12:43:32 PM

ADR version 1.9.0.325

Page 1 of 1

Method Blank Outlier Report

Lab Reporting Batch ID: K1613587

Laboratory: ALS_K

EDD Filename: K1613587_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610885-6	12/14/2016 8:18:00 PM	3-NITROTOLUENE	0.050 mg/Kg	FTBL-IS-105-110316RRE FTBL-IS-106-110316RRE FTBL-IS-110-110316RRE FTBL-IS-124-110316RRE FTBL-IS-125-110316RRE FTBL-IS-128-110316RRE FTBL-IS-135-110316A-RRE FTBL-IS-135-110316B-RRE FTBL-IS-135-110316C-RRE FTBL-IS-138-110316RRE
KWG1610885-7	12/14/2016 8:54:00 PM	3-NITROTOLUENE	0.099 mg/Kg	FTBL-IS-105-110316RRE FTBL-IS-106-110316RRE FTBL-IS-110-110316RRE FTBL-IS-124-110316RRE FTBL-IS-125-110316RRE FTBL-IS-128-110316RRE FTBL-IS-135-110316A-RRE FTBL-IS-135-110316B-RRE FTBL-IS-135-110316C-RRE FTBL-IS-138-110316RRE

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:34 PM

ADR version 1.9.0.325

Page 1 of 1

Surrogate Outlier Report

Lab Reporting Batch ID: K1613587

Laboratory: ALS_K

EDD Filename: K1613587_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

<i>Sample ID (Analysis Type)</i>	<i>Surrogate</i>	<i>Sample % Recovery</i>	<i>% Recovery Limits</i>	<i>Affected Compounds</i>	<i>Flag</i>
FTBL- IS-106-110316R (Initial1)	1-Chloro-3-nitrobenzene	139	34.00-135.00	All Target Analytes	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:36 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613587

Laboratory: ALS_K

EDD Filename: K1613587_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-110-110316RMS (Dry) (FTBL-IS-110-110316R)	LEAD	123	-	84.00-118.00	-	LEAD	J (all detects)

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-135-110316A-RMSD (FTBL-IS-135-110316A-R)	1,3,5-TRINITROBENZENE	-	72	80.00-116.00	-	1,3,5-TRINITROBENZENE	J(all detects)
	2,6-DINITROTOLUENE	-	73	79.00-117.00	-	2,6-DINITROTOLUENE	UJ(all non-detects)
	HMX	-	62	74.00-124.00	-	HMX	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:37 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613587

Laboratory: ALS_K

EDD Filename: K1613587_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610389-6 (FTBL-IS-105-110316R FTBL-IS-106-110316R FTBL-IS-110-110316R FTBL-IS-124-110316R FTBL-IS-125-110316R FTBL-IS-128-110316R FTBL-IS-135-110316A-R FTBL-IS-135-110316B-R FTBL-IS-135-110316C-R FTBL-IS-138-110316R)	Tetryl	0	-	68.00-135.00	-	Tetryl	J (all detects) R (all non-detects)
KWG1610389-6 (FTBL-IS-105-110316R FTBL-IS-106-110316R FTBL-IS-110-110316R FTBL-IS-124-110316R FTBL-IS-125-110316R FTBL-IS-128-110316R FTBL-IS-135-110316A-R FTBL-IS-135-110316B-R FTBL-IS-135-110316C-R FTBL-IS-138-110316R)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE NITROGLYCERIN	11 43 28 65 62 71	- - - - - -	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 73.00-124.00	- - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE NITROGLYCERIN	J(all detects) UJ(all non-detects)
KWG1610885-8 (FTBL-IS-105-110316RRE FTBL-IS-106-110316RRE FTBL-IS-110-110316RRE FTBL-IS-124-110316RRE FTBL-IS-125-110316RRE FTBL-IS-128-110316RRE FTBL-IS-135-110316A-RRE FTBL-IS-135-110316B-RRE FTBL-IS-135-110316C-RRE FTBL-IS-138-110316RRE)	1,3,5-TRINITROBENZENE Tetryl	59 19	- -	80.00-116.00 68.00-135.00	- -	1,3,5-TRINITROBENZENE Tetryl	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:39 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613587

Laboratory: ALS_K

EDD Filename: K1613587_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-105-110316R	2-AMINO-4,6-DINITROTOLUENE	JP	0.0087	0.041	LOQ	mg/Kg	J (all detects)
	2-NITROTOLUENE	J	0.0092	0.081	LOQ	mg/Kg	
	4-Amino-2,6-Dinitrotoluene	JN	0.014	0.081	LOQ	mg/Kg	
	NITROBENZENE	J	0.014	0.081	LOQ	mg/Kg	
FTBL-IS-105-110316RRE	NITROBENZENE	JN	0.012	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-106-110316R	2-AMINO-4,6-DINITROTOLUENE	JN	0.013	0.040	LOQ	mg/Kg	J (all detects)
	2-NITROTOLUENE	JN	0.015	0.080	LOQ	mg/Kg	
	4-Amino-2,6-Dinitrotoluene	JN	0.017	0.080	LOQ	mg/Kg	
	NITROBENZENE	JN	0.012	0.080	LOQ	mg/Kg	
FTBL-IS-106-110316RRE	NITROBENZENE	JN	0.016	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-110-110316R	NITROBENZENE	JN	0.014	0.083	LOQ	mg/Kg	J (all detects)
FTBL-IS-125-110316RRE	NITROBENZENE	JN	0.0085	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-138-110316R	NITROBENZENE	J	0.015	0.081	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:41 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37784B40
SDG #: K1613587
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR/M

Date: 12/28/16
Page: 1 of 2
Reviewer: [Signature]
2nd Reviewer: _____

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/M	Res - out of HT
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	Not reviewed for ADR review.
V.	Field blanks		Not reviewed for ADR review.
VI.	Surrogate spikes		Not reviewed for ADR review.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR review.
VIII.	Laboratory control samples		Not reviewed for ADR review.
IX.	Field duplicates	ND	TP = 1 + 3 + 5. 2 + 4 + 6
X.	Compound quantitation RL/LOQ/LODs	M	Not reviewed for ADR review.
XI.	Target compound identification	N	Not reviewed for ADR review.
XII.	Overall assessment of data	M	Not reviewed for ADR review.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-135-110316A-R**	K1613587-001**	Soil	11/03/16
2	FTBL-IS-135-110316A-RRE**	K1613587-001RE**	Soil	11/03/16
3	FTBL-IS-135-110316B-R**	K1613587-002**	Soil	11/03/16
4	FTBL-IS-135-110316B-RRE**	K1613587-002RE**	Soil	11/03/16
5	FTBL-IS-135-110316C-R**	K1613587-003**	Soil	11/03/16
6	FTBL-IS-135-110316C-RRE**	K1613587-003RE**	Soil	11/03/16
7	FTBL-IS-138-110316R**	K1613587-004**	Soil	11/03/16
8	FTBL-IS-138-110316RRE**	K1613587-004RE**	Soil	11/03/16
9	FTBL-IS-128-110316R	K1613587-005	Soil	11/03/16
10	FTBL-IS-128-110316RRE	K1613587-005RE	Soil	11/03/16
11	FTBL-IS-124-110316R	K1613587-006	Soil	11/03/16
12	FTBL-IS-124-110316RRE	K1613587-006RE	Soil	11/03/16
13	FTBL-IS-125-110316R	K1613587-007	Soil	11/03/16
14	FTBL-IS-125-110316RRE	K1613587-007RE	Soil	11/03/16
15	FTBL-IS-105-110316R	K1613587-008	Soil	11/03/16
16	FTBL-IS-105-110316RRE	K1613587-008RE	Soil	11/03/16

LDC #: 37784B40
 SDG #: K1613587
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR/IV

Date: 12/28/16
 Page: 2 of 2
 Reviewer: [Signature]
 2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
17	FTBL-IS-106-110316R	K1613587-009	Soil	11/03/16
18	FTBL-IS-106-110316RRE	K1613587-009RE	Soil	11/03/16
19	FTBL-IS-110-110316R	K1613587-010	Soil	11/03/16
20	FTBL-IS-110-110316RRE	K1613587-010RE	Soil	11/03/16
21	FTBL-IS-135-110316A-RMS	K1613587-001MS	Soil	11/03/16
22	FTBL-IS-135-110316A-RMSD	K1613587-001MSD	Soil	11/03/16
23	FTBL-IS-135-110316A-RDUP	K1613587-001DUP	Soil	11/03/16
24	FTBL-IS-135-110316A-RTRP	K1613587-001TRP	Soil	11/03/16
25	FTBL-IS-135-110316A-RREMS	K1613587-001REMS	Soil	11/03/16
26	FTBL-IS-135-110316A-RREMSD	K1613587-001REMSD	Soil	11/03/16
27	FTBL-IS-135-110316A-RREDUP	K1613587-001REDUP	Soil	11/03/16
28	FTBL-IS-135-110316A-RRETRP	K1613587-001RETRP	Soil	11/03/16
29				
30				
31				
32				
33				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

[illegible]

Comments:

Quality Control Outlier Reports

K1613698

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: K1613698
 EDD Filename: K1613698_SEDD2A

Laboratory: ALS_K
 eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B	Preparation Method: EPA 3535A
Matrix: Soil	

Sample ID	Type	Actual	Criteria	Units	Flag
FTBL-IS-006-110716RRE (Reanalys	Sampling To Extraction	25.00	14.00	DAYS	J (all detects)
FTBL-IS-008-110716RRE (Reanalys		25.00	14.00	DAYS	UJ (all non-detects)
FTBL-IS-015-110716RMS (Initial)		25.00	14.00	DAYS	
FTBL-IS-015-110716RMSD (Initial)		25.00	14.00	DAYS	
FTBL-IS-015-110716RRE (Reanalys		25.00	14.00	DAYS	
FTBL-IS-015-110716RRREP3 (Initial)		25.00	14.00	DAYS	
FTBL-IS-015-110716RRREP5 (Initial)		25.00	14.00	DAYS	
FTBL-IS-016-110716RRE (Reanalys		25.00	14.00	DAYS	
FTBL-IS-019-110716RRE (Reanalys		25.00	14.00	DAYS	
FTBL-IS-020-110716RRE (Reanalys		25.00	14.00	DAYS	
FTBL-IS-021-110716RRE (Reanalys		25.00	14.00	DAYS	
FTBL-IS-022-110716RRE (Reanalys		25.00	14.00	DAYS	
FTBL-IS-023-110716RRE (Reanalys		25.00	14.00	DAYS	
FTBL-IS-102-110716RRE (Reanalys		25.00	14.00	DAYS	

Project Name and Number: 06261038.0001.00400 -

1/5/2017 12:43:51 PM

ADR version 1.9.0.325

Page 1 of 1

Method Blank Outlier Report

Lab Reporting Batch ID: K1613698

Laboratory: ALS_K

EDD Filename: K1613698_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610465-7	12/3/2016 7:24:00 PM	3-NITROTOLUENE	0.022 mg/Kg	FTBL-IS-006-110716R FTBL-IS-008-110716R FTBL-IS-015-110716R FTBL-IS-016-110716R FTBL-IS-019-110716R FTBL-IS-020-110716R FTBL-IS-021-110716R FTBL-IS-022-110716R FTBL-IS-023-110716R FTBL-IS-102-110716R
KWG1610896-7	12/16/2016 9:22:00 PM	3-NITROTOLUENE	0.28 mg/Kg	FTBL-IS-006-110716RRE FTBL-IS-008-110716RRE FTBL-IS-015-110716RRE FTBL-IS-016-110716RRE FTBL-IS-019-110716RRE FTBL-IS-020-110716RRE FTBL-IS-021-110716RRE FTBL-IS-022-110716RRE FTBL-IS-023-110716RRE FTBL-IS-102-110716RRE
KWG1610896-8	12/16/2016 8:46:00 PM	3-NITROTOLUENE	0.13 mg/Kg	FTBL-IS-006-110716RRE FTBL-IS-008-110716RRE FTBL-IS-015-110716RRE FTBL-IS-016-110716RRE FTBL-IS-019-110716RRE FTBL-IS-020-110716RRE FTBL-IS-021-110716RRE FTBL-IS-022-110716RRE FTBL-IS-023-110716RRE FTBL-IS-102-110716RRE

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:53 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613698

Laboratory: ALS_K

EDD Filename: K1613698_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-015-110716RMSD (FTBL-IS-015-110716R)	3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	- - - - -	- - - - -	67.00-129.00 64.00-127.00 67.00-129.00 73.00-124.00 72.00-128.00	23 (20.00) 23 (20.00) 23 (20.00) 23 (20.00) 24 (20.00)	3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J (all detects)
FTBL-IS-015-110716RMS FTBL-IS-015-110716RMSD (FTBL-IS-015-110716R)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 4-NITROTOLUENE HMX RDX Tetryl	- - - - - - - - 72 62 -	59 68 65 72 65 68 67 69 58 65 52	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 71.00-124.00 74.00-124.00 67.00-129.00 68.00-135.00	36 (20.00) 23 (20.00) 27 (20.00) 23 (20.00) - 23 (20.00) 24 (20.00) 24 (20.00) 21 (20.00) - 46 (20.00)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 4-NITROTOLUENE HMX RDX Tetryl	J(all detects) UJ(all non-detects)
FTBL-IS-015-110716RMSD (FTBL-IS-015-110716R)	4-NITROTOLUENE	-	-	71.00-124.00	21 (20.00)	4-NITROTOLUENE	J(all detects)
FTBL-IS-015-110716RMSD (FTBL-IS-015-110716R)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 4-Amino-2,6-Dinitrotoluene HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX Tetryl	- - - - - - - - - - - -	63 68 63 69 68 63 61 61 66 62 58 54	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 64.00-127.00 74.00-124.00 73.00-124.00 72.00-128.00 67.00-129.00 68.00-135.00	35 (20.00) 30 (20.00) 36 (20.00) 31 (20.00) 26 (20.00) 35 (20.00) 36 (20.00) 39 (20.00) 34 (20.00) 36 (20.00) 34 (20.00) 44 (20.00)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 4-Amino-2,6-Dinitrotoluene HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX Tetryl	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:55 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613698

Laboratory: ALS_K

EDD Filename: K1613698_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610465-6 (FTBL-IS-006-110716R FTBL-IS-008-110716R FTBL-IS-015-110716R FTBL-IS-016-110716R FTBL-IS-019-110716R FTBL-IS-020-110716R FTBL-IS-021-110716R FTBL-IS-022-110716R FTBL-IS-023-110716R FTBL-IS-102-110716R)	1,3,5-TRINITROBENZENE Tetryl	4 0	- -	80.00-116.00 68.00-135.00	- -	1,3,5-TRINITROBENZENE Tetryl	J (all detects) R (all non-detects)
KWG1610465-6 (FTBL-IS-006-110716R FTBL-IS-008-110716R FTBL-IS-015-110716R FTBL-IS-016-110716R FTBL-IS-019-110716R FTBL-IS-020-110716R FTBL-IS-021-110716R FTBL-IS-022-110716R FTBL-IS-023-110716R FTBL-IS-102-110716R)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	50 31 67 67 66 47 58	- - - - - - -	73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 74.00-124.00 73.00-124.00 72.00-128.00	- - - - - - -	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE HMX NITROGLYCERIN Pentaerythritol Tetranitrate (PETN)	J(all detects) UJ(all non-detects)
KWG1610896-5 (FTBL-IS-006-110716RRE FTBL-IS-008-110716RRE FTBL-IS-015-110716RRE FTBL-IS-016-110716RRE FTBL-IS-019-110716RRE FTBL-IS-020-110716RRE FTBL-IS-021-110716RRE FTBL-IS-022-110716RRE FTBL-IS-023-110716RRE FTBL-IS-102-110716RRE)	NITROBENZENE	65	-	67.00-129.00	-	NITROBENZENE	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:43:57 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37784C4a
 SDG #: K1613687-5A8
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR Level III

Date: 11/4/17
 Page: 1 of 1
 Reviewer: SSD
 2nd Reviewer: Q

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	11/7/17
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	CS
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-019-110716R	L1613698-003	Soil	11/07/16
2	FTBL-IS-022-110716R	L1613698-008	Soil	11/07/16
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes: _____

LDC #: 37784C40
SDG #: K1613698
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/28/16
Page: 1 of 2
Reviewer: [Signature]
2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/m	REs out of HT
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	TN	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-015-110716R	L1613698-001	Soil	11/07/16
2	FTBL-IS-015-110716RRE	L1613698-001RE	Soil	11/07/16
3	FTBL-IS-016-110716R	L1613698-002	Soil	11/07/16
4	FTBL-IS-016-110716RRE	L1613698-002RE	Soil	11/07/16
5	FTBL-IS-019-110716R	L1613698-003	Soil	11/07/16
6	FTBL-IS-019-110716RRE	L1613698-003RE	Soil	11/07/16
7	FTBL-IS-008-110716R	L1613698-004	Soil	11/07/16
8	FTBL-IS-008-110716RRE	L1613698-004RE	Soil	11/07/16
9	FTBL-IS-021-110716R	L1613698-005	Soil	11/07/16
10	FTBL-IS-021-110716RRE	L1613698-005RE	Soil	11/07/16
11	FTBL-IS-020-110716R	L1613698-006	Soil	11/07/16
12	FTBL-IS-020-110716RRE	L1613698-006RE	Soil	11/07/16
13	FTBL-IS-023-110716R	L1613698-007	Soil	11/07/16
14	FTBL-IS-023-110716RRE	L1613698-007RE	Soil	11/07/16
15	FTBL-IS-022-110716R	L1613698-008	Soil	11/07/16
16	FTBL-IS-022-110716RRE	L1613698-008RE	Soil	11/07/16

LDC #: 37784C40
SDG #: K1613698
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/28/16
Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: _____

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
17	FTBL-IS-006-110716R	L1613698-009	Soil	11/07/16
18	FTBL-IS-006-110716RRE	L1613698-009RE	Soil	11/07/16
19	FTBL-IS-102-110716R	L1613698-010	Soil	11/07/16
20	FTBL-IS-102-110716RRE	L1613698-010RE	Soil	11/07/16
21	FTBL-IS-015-110716RMS	L1613698-001MS	Soil	11/07/16
22	FTBL-IS-015-110716RMSD	L1613698-001MSD	Soil	11/07/16
23	FTBL-IS-015-110716RDUP	L1613698-001DUP	Soil	11/07/16
24	FTBL-IS-015-110716RTRP	L1613698-001TRP	Soil	11/07/16
25	FTBL-IS-015-110716RREMS	L1613698-001REMS	Soil	11/07/16
26	FTBL-IS-015-110716RREMSD	L1613698-001REMSD	Soil	11/07/16
27	FTBL-IS-015-110716RREDUP	L1613698-001REDUP	Soil	11/07/16
28	FTBL-IS-015-110716RRETRP	L1613698-001RETRP	Soil	11/07/16
29				
30				
31				
32				
33				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

METHOD: GC / ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y	N	N/A	Was the overall quality and usability of the data acceptable?

[illegible]

Comments: _____

Quality Control Outlier Reports

K1613914

Method Blank Outlier Report

Lab Reporting Batch ID: K1613914

Laboratory: ALS_K

EDD Filename: K1613914_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610697-7	12/15/2016 2:48:00 PM	3-NITROTOLUENE	0.020 mg/Kg	FTBL-IS-063-111116-R FTBL-IS-068-111116-R FTBL-IS-069-111116-R FTBL-IS-079-111116-R FTBL-IS-081-111116-R FTBL-IS-088-111116-R FTBL-IS-097-111116A-R FTBL-IS-097-111116B-R FTBL-IS-097-111116C-R FTBL-IS-098-111116-R FTBL-IS-099-111116-R

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-079-111116-R(Initial2)	3-NITROTOLUENE	0.023 mg/Kg	0.023U mg/Kg

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:44:29 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613914

Laboratory: ALS_K

EDD Filename: K1613914_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610697-6 (FTBL-IS-063-111116-R FTBL-IS-068-111116-R FTBL-IS-069-111116-R FTBL-IS-079-111116-R FTBL-IS-081-111116-R FTBL-IS-088-111116-R FTBL-IS-097-111116A-R FTBL-IS-097-111116B-R FTBL-IS-097-111116C-R FTBL-IS-098-111116-R FTBL-IS-099-111116-R)	NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	41 62 56	- - -	73.00-124.00 72.00-128.00 68.00-135.00	- - -	NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) Tetryl	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:44:31 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613914

Laboratory: ALS_K

EDD Filename: K1613914_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-069-111116-R	NITROBENZENE	JN	0.0098	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-079-111116-R	3-NITROTOLUENE	JN	0.023	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-088-111116-R	NITROBENZENE	JN	0.0047	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-098-111116-R	NITROBENZENE	J	0.017	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-099-111116-R	2,6-DINITROTOLUENE	JN	0.0099	0.041	LOQ	mg/Kg	J (all detects)
	NITROBENZENE	J	0.013	0.081	LOQ	mg/Kg	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/5/2017 12:44:33 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37784D4a
SDG #: K1613914
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR Level 3

Date: 11/11/16
Page: 1 of 1
Reviewer: SD
2nd Reviewer: a

METHOD: Arsenic (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	11/11/16
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	CS
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-098-111116-R	K1613914-004	Soil	11/11/16
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

LDC #: 37784D40
 SDG #: K1613914
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 12/29/16
 Page: 1 of 1
 Reviewer:
 2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	ND	TP=1+2+3
X.	Compound quantitation RL/LOQ/LODs	SW	see table IV
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-097-111116A-R	K1613914-001	Soil	11/11/16
2	FTBL-IS-097-111116B-R	K1613914-002	Soil	11/11/16
3	FTBL-IS-097-111116C-R	K1613914-003	Soil	11/11/16
4	FTBL-IS-098-111116-R	K1613914-004	Soil	11/11/16
5	FTBL-IS-088-111116-R	K1613914-005	Soil	11/11/16
6	FTBL-IS-081-111116-R	K1613914-006	Soil	11/11/16
7	FTBL-IS-099-111116-R	K1613914-007	Soil	11/11/16
8	FTBL-IS-079-111116-R	K1613914-008	Soil	11/11/16
9	FTBL-IS-068-111116-R	K1613914-009	Soil	11/11/16
10	FTBL-IS-063-111116-R	K1613914-010	Soil	11/11/16
11	FTBL-IS-069-111116-R	K1613914-011	Soil	11/11/16
12	FTBL-IS-097-111116A-RMS	K1613914-001MS	Soil	11/11/16
13	FTBL-IS-097-111116A-RMSD	K1613914-001MSD	Soil	11/11/16
14	FTBL-IS-097-111116A-RDUP	K1613914-001DUP	Soil	11/11/16
15	FTBL-IS-097-111116A-RTRP	K1613914-001TRP	Soil	11/11/16
16				

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N ~~N/A~~

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y N N/A

Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: January 9, 2017

Parameters: Lead

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1613587

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-110-110316R	K1613587-010	Soil	11/03/16
FTBL-IS-110-110316RMS	K1613587-010MS	Soil	11/03/16
FTBL-IS-110-110316RMSD	K1613587-010MSD	Soil	11/03/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For FTBL-IS-110-110316RMS/MSD, no data were qualified for Lead percent recoveries (%R) outside the QC limits since the serial dilution percent differences (%D) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Lead - Data Qualification Summary - SDG K1613587

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Laboratory Blank Data Qualification Summary - SDG K1613587

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Lead - Field Blank Data Qualification Summary - SDG K1613587

No Sample Data Qualified in this SDG

LDC #: 37784B4a

VALIDATION COMPLETENESS WORKSHEET

SDG #: K1613587

Level IV

Laboratory: ALS Environmental

Date: 11/3/14

Page: 1 of 1

Reviewer: SD

2nd Reviewer:

METHOD: Lead (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	11/3/14
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	MSLO = (2.3)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	BER = (1)
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-110-110316R	K1613587-010	Soil	11/03/16
2	FTBL-IS-110-110316RMS	K1613587-010MS	Soil	11/03/16
3	FTBL-IS-110-110316RMSD	K1613587-010MSD	Soil	11/03/16
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

Method:Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients ≥ 0.995 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm RL$ ($\pm 2X RL$ for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/			
If the %Rs were outside the criteria, was a reanalysis performed?	/			
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL (ICP/MS)?	/			
Were all percent differences (%Ds) < 10%?	/			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		/		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
XIII. Field blanks				
Field blanks were identified in this SDG.		/		
Target analytes were detected in the field blanks.			/	

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) $\leq 20\%$ for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

[illegible]

Comments: _____

LDC #: 3734B4a

VALIDATION FINDINGS WORKSHEET **Initial and Continuing Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: SD
 2nd Reviewer: _____

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
<u>ICV</u> <u>12:08</u>	ICP/MS (Initial calibration)	<u>Pb</u>	<u>24.39 ug/L</u>	<u>25 ug/L</u>	<u>98%R</u>	<u>98%R</u>	<u>Y</u>
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
<u>CCV</u> <u>13:05</u>	ICP/MS (Continuing calibration)	<u>Pb</u>	<u>25.16 ug/L</u>	<u>25 ug/L</u>	<u>101%R</u>	<u>101%R</u>	<u>Y</u>
	CVAA (Continuing calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibration)						

Comments: _____

LDC #: 3773484a

VALIDATION FINDINGS WORKSHEET **Level IV Recalculation Worksheet**

Page: 1 of 1
 Reviewer: SD
 2nd Reviewer: _____

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation,
 Found = SSR (spiked sample result) - SR (sample result).
 True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
 D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
 SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
N	ICP interference check						
LCS 12:42	Laboratory control sample	Pb	93.9 mg/kg	100 mg/kg	93%R	93%R	Y
MS 12:57	Matrix spike		(SSR-SR) 127.5 mg/kg	103 mg/kg	124%R	123%R	
MSD 13:01	Duplicate		173.2 mg/kg	173.7 mg/kg	117%RPD	117%RPD	
SER 12:50	ICP serial dilution		129.7 µg/L	130.5 µg/L	19%D	19%D	

Comments: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: January 9, 2017

Parameters: Explosives

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1613914

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-097-111116A-R	K1613914-001	Soil	11/11/16
FTBL-IS-097-111116B-R	K1613914-002	Soil	11/11/16
FTBL-IS-097-111116C-R	K1613914-003	Soil	11/11/16
FTBL-IS-098-111116-R	K1613914-004	Soil	11/11/16
FTBL-IS-088-111116-R	K1613914-005	Soil	11/11/16
FTBL-IS-081-111116-R	K1613914-006	Soil	11/11/16
FTBL-IS-099-111116-R	K1613914-007	Soil	11/11/16
FTBL-IS-079-111116-R	K1613914-008	Soil	11/11/16
FTBL-IS-068-111116-R	K1613914-009	Soil	11/11/16
FTBL-IS-063-111116-R	K1613914-010	Soil	11/11/16
FTBL-IS-069-111116-R	K1613914-011	Soil	11/11/16
FTBL-IS-097-111116A-RMS	K1613914-001MS	Soil	11/11/16
FTBL-IS-097-111116A-RMSD	K1613914-001MSD	Soil	11/11/16
FTBL-IS-097-111116A-RDUP	K1613914-001DUP	Soil	11/11/16
FTBL-IS-097-111116A-RTRP	K1613914-001TRP	Soil	11/11/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

Retention time windows were established as required by the method.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG1610697-7 (storage blank)	11/23/16	3-Nitrotoluene	0.020 mg/Kg	All samples in SDG K1613914

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
FTBL-IS-079-111116-R	3-Nitrotoluene	0.023 mg/Kg	0.041U mg/Kg

V. Field Blanks

No field blanks were identified in this SDG.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates/Triplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits with the following exceptions:

SRM ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
KWG1610697-6	Tetryl Nitroglycerin Pentaerythritol tetranitrate	56 (62-130) 41 (56-139) 62 (65-127)	All samples in SDG K1613914	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P

IX. Field Duplicates/Field Triplicates

No field duplicates were identified in this SDG.

Samples FTBL-IS-097-111116A-R, FTBL-IS-097-111116B-R, and FTBL-IS-097-111116C-R were identified as field triplicates. No results were detected in any of the samples.

X. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
FTBL-IS-069-111116-R	Nitrobenzene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	A
FTBL-IS-099-111116-R	2,6-Dinitrotoluene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	A
FTBL-IS-079-111116-R	3-Nitrotoluene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	A

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
FTBL-IS-088-111116-R	Nitrobenzene	105	J (all detects)	A

XI. Target Compound Identifications

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to SRM %R, data were qualified as estimated in eleven samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in three samples.

Due to RPD between two columns, data were qualified as estimated in one sample.

Due to storage blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Explosives - Data Qualification Summary - SDG K1613914

Sample	Compound	Flag	A or P	Reason
FTBL-IS-097-111116A-R FTBL-IS-097-111116B-R FTBL-IS-097-111116C-R FTBL-IS-098-111116-R FTBL-IS-088-111116-R FTBL-IS-081-111116-R FTBL-IS-099-111116-R FTBL-IS-079-111116-R FTBL-IS-068-111116-R FTBL-IS-063-111116-R FTBL-IS-069-111116-R	Tetryl Nitroglycerin Pentaerythritol tetranitrate	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	P	Standard reference materials (%R)
FTBL-IS-069-111116-R	Nitrobenzene	NJ (all detects)	A	Compound quantitation (no confirmation)
FTBL-IS-099-111116-R	2,6-Dinitrotoluene	NJ (all detects)	A	Compound quantitation (no confirmation)
FTBL-IS-079-111116-R	3-Nitrotoluene	NJ (all detects)	A	Compound quantitation (no confirmation)
FTBL-IS-088-111116-R	Nitrobenzene	J (all detects)	A	Compound quantitation (RPD between two columns)

Fort Bliss, Castner Range
Explosives - Laboratory Blank Data Qualification Summary - SDG K1613914

Sample	Compound	Modified Final Concentration	A or P
FTBL-IS-079-111116-R	3-Nitrotoluene	0.041U mg/Kg	A

Fort Bliss, Castner Range
Explosives - Field Blank Data Qualification Summary - SDG K1613914

No Sample Data Qualified in this SDG

LDC #: 37784D40
SDG #: K1613914
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET Level IV

Date: 11/9/16
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	RSD ≤ 15%. ICV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	W	LB and storage blank
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates TP	A/A	
VIII.	Laboratory control samples	W	LES, SRM
IX.	Field duplicates / Triplicate	N/ND	TP = 1 + 2 + 3
X.	Compound quantitation RL/LOQ/LODs	W	
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-097-111116A-R	K1613914-001	Soil	11/11/16
2	FTBL-IS-097-111116B-R	K1613914-002	Soil	11/11/16
3	FTBL-IS-097-111116C-R	K1613914-003	Soil	11/11/16
4	FTBL-IS-098-111116-R	K1613914-004	Soil	11/11/16
5	FTBL-IS-088-111116-R	K1613914-005	Soil	11/11/16
6	FTBL-IS-081-111116-R	K1613914-006	Soil	11/11/16
7	FTBL-IS-099-111116-R	K1613914-007	Soil	11/11/16
8	FTBL-IS-079-111116-R	K1613914-008	Soil	11/11/16
9	FTBL-IS-068-111116-R	K1613914-009	Soil	11/11/16
10	FTBL-IS-063-111116-R	K1613914-010	Soil	11/11/16
11	FTBL-IS-069-111116-R	K1613914-011	Soil	11/11/16
12	FTBL-IS-097-111116A-RMS	K1613914-001MS	Soil	11/11/16
13	FTBL-IS-097-111116A-RMSD	K1613914-001MSD	Soil	11/11/16
14	FTBL-IS-097-111116A-RDUP	K1613914-001DUP	Soil	11/11/16
15	FTBL-IS-097-111116A-RTRP	K1613914-001TRP	Soil	11/11/16
16				

Method: GC ☒ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) \leq <u>15</u> 20%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 20% or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) \leq 20% or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Field Blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

LDC #: 3784040

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer: _____

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	/			
Were target compounds detected in the field duplicates?		/		
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q. Pentaerythritol Tetranitrate		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

VALIDATION FINDINGS WORKSHEET

BlanksMETHOD: ✓ GC-HP LC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ Y ☐ N ☐ N/A Were all samples associated with a given method blank?
- ☒ Y ☐ N ☐ N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
- ☒ Y ☐ N ☐ N/A Was a method blank performed with each extraction batch?
- ☒ Y ☐ N ☐ N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Blank extraction date: 11/23/16 Blank analysis date: 12/13/16Conc. units: mg/kgAssociated samples: all

Compound	Blank ID	Sample Identification							
(Storage Blank) <u>KNF161069T-7</u>		<u>8</u>							
<u>M</u>	<u>0.020</u>	<u>0.023</u>							
		<u>0.0414</u>							

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification							

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

☒ N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y/N/N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

Y	N	N/A	Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
---	---	-----	---

[illegible]

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

✓ Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y/N/N/A Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

LDC #: 3724040

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

Page: 1 of 1Reviewer: 9

2nd Reviewer: _____

METHOD: GC _____ HPLC ✓

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
 average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)

A = Area of compound,
 C = Concentration of compound,
 S = Standard deviation of the CF
 X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (1000std)	CF (1000std)	Average CF (initial)	Average CF (initial)	%RSD	%RSD
1	ICAL (08)	11/30/16	F	33600	33572	33400	33390	3.8	3.8
2	ICAL (10)	12/7/16	A	11900	11950	12000	11970	1.7	1.8
			M	20300	20277	20100	20140	1.8	1.9
			O	21500	21522	20800	20838	7.2	7.3
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3184040

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1Reviewer: A

2nd Reviewer: _____

METHOD: GC _____ HPLC ☒

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
 CF = A/C

Where: ave. CF = initial calibration average CF
 CF = continuing calibration CF
 A = Area of compound
 C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(lcal)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	1213000103	12/13/16	A	12000	10800	10799	10	10
	(10)		M	20100	17900	17868	11	11
			D	20800	18500	18511	11	11
2	1214000103	12/14/16	A	12000	11600	11634	3	3
	(10)		M	20100	19000	18977	6	6
			D	20800	20800	20773	0	0
3	1215000103	12/15/16	F	33400	34600	34556	3	3
	(08)							
4	121500014	12/15/16	F	33400	34500	34453	3	3
	1216000103	12/16/16	F	33400	34500	34451	3	3

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Surrogate Results VerificationMETHOD: GC / HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate SpikedSample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
<u>1-chloro-3-nitrobenzene</u>		<u>5000</u>	<u>4415</u>	<u>88</u>	<u>88</u>	<u>0</u>

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

VALIDATION FINDINGS WORKSHEET **Matrix Spike/Matrix Spike Duplicates Results Verification**

METHOD: GC ☒ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where

SSC = Spiked sample concentration

SC = Sample concentration

SA = Spike added

MS = Matrix spike

MSD = Matrix spike duplicate

$$\text{RPD} = ((\text{SSCMS} - \text{SSCMSD}) * 2) / (\text{SSCMS} + \text{SSCMSD}) * 100$$

MS/MSD samples: 12/13

Compound	Spike Added (MS/ES)		Sample Conc. (MS/ES)	Spike Sample Concentration (MS/ES)		Matrix spike		Matrix Spike Duplicate		MS/MSD	
	MS	MSD		MS	MSD	Percent Recovery		Percent Recovery		RPD	
						Reported	Recalc.	Reported	Recalc.	Reported	Recalc.

Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)	202	200	ND	191	205	94	94	102	102	7	7
2,4,6-Trinitrotoluene (8330)	↓	↓	↓	193	206	96	96	103	103	7	7

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Laboratory Control Sample/Laboratory Control Sample Duplicate Results VerificationReviewer: AK

2nd Reviewer: _____

METHOD: GC / HPLC

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where: SSC = Spiked sample concentration

SC = Concentration

SA = Spike added

$$\text{RPD} = | \text{SSCLCS} - \text{SSCLCSD} | * 2 / (\text{SSCLCS} + \text{SSCLCSD})$$

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: HW#161069T-5

Compound	Spike Added (MSS)		Spiked Sample Concentration (MSS)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)	2.90	NA	2.16	NA	108	108				
2,4,6-Trinitrotoluene (8330)	↓	↓	2.14	↓	107	107				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Sample Calculation VerificationMETHOD: GC / HPLCY N N/A
Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

Example:

Sample ID. 5 Compound Name F

A= Area or height of the compound to be measured

Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound
In the initial calibration

Vs= Initial volume of the sample

Ws= Initial weight of the sample

%S= Percent Solid

Concentration = $\frac{(195580)(8)(1)}{(33400)(10.0278)(0.986)(1000)}$ $= 0.0047 \text{ mg/kg}$

#	Sample ID	Compound	Reported Concentrations (<u>mg/kg</u>)	Recalculated Results Concentrations (<u> </u>)	Qualifications
	<u>5</u>	<u>5 F</u>	<u>0.0047</u>		

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

December 22, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on December 6, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37664:

SDG

K1613318, K1613379, K1613506

Fraction:

Explosives

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1613318, K1613379, and K1613506

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

December 22, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the October through November 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample (LCS), laboratory triplicate samples (TRP), and sample reference materials (SRM). Approximately 33 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks with the exception of three blanks for 3-nitrotoluene. The associated sample concentrations were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank and no data were qualified.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives in two MS/MSD pairs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details are provided in Enclosure I.

VIII. Triplicate Sample Analysis

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

IX. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613318/ 8330B	FTBL-1S-080-103116R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613318/ 8330B	FTBL-1S-130-103116R	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613379/ 8330B	FTBL-IS-147-110116R	2,6-Dinitrotoluene Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613379/ 8330B	FTBL-IS-148-110116R	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613506/ 8330B	FTBL-IS-133-110216R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613506/ 8330B	FTBL-IS-139-110216R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613506/ 8330B	FTBL-IS-145-110216R	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in these SDGs.

Due to LCS and SRM %R exceedances, data were qualified as estimated in fifteen samples.

Due to MS/MSD %R and RPD, data were qualified as estimated in two samples.

Due to results not being confirmed, data were qualified as presumptive in seven samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
31-Oct-2016	FTBL-1S-086-103116R	K1613318-001	N	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RMSD	KWG1610099-10	MSD	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RREP1	KWG1610099-2	DUP	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RREP3	KWG1610099-4	DUP	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RMS	KWG1610099-9	MS	METHOD	8330B	III
31-Oct-2016	FTBL-1S-080-103116R	K1613318-002	N	METHOD	8330B	III
31-Oct-2016	FTBL-1S-130-103116R	K1613318-003	N	METHOD	8330B	III
31-Oct-2016	FTBL-1S-131-103116R	K1613318-004	N	METHOD	8330B	III
01-Nov-2016	FTBL-IS-144-110116R	K1613379-001	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RREP1	KWG1610195-1	DUP	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RREP3	KWG1610195-2	DUP	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RMS	KWG1610195-3	MS	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RMSD	KWG1610195-4	MSD	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-147-110116R	K1613379-002	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-148-110116R	K1613379-003	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-143-110116R	K1613379-004	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-141-110116R	K1613379-005	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-142-110116R	K1613379-006	N	EPA 3535A	8330B	III
02-Nov-2016	FTBL-IS-145-110216R	K1613506-001	N	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RMS	KWG1610337-1	MS	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RMSD	KWG1610337-2	MSD	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RREP1	KWG1610337-5	DUP	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RREP3	KWG1610337-6	DUP	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-132-110216R	K1613506-002	N	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-139-110216R	K1613506-003	N	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-133-110216R	K1613506-004	N	METHOD	8330B	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-Nov-2016	FTBL-IS-134-110216R	K1613506-005	N	METHOD	8330B	IV

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A, K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613318

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-1S-080-103116R 10/31/2016 10:50:00
Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0063	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-1S-086-103116R 10/31/2016 9:00:00
Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs

Sample ID: FTBL-1S-130-103116R 10/31/2016 1:00:00
Collected: PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.069	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-1S-131-103116R 10/31/2016 3:00:00
Collected: PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 1 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A, K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613318

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-131-103116R

Collected: PM

10/31/2016 3:00:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

SDG: K1613379

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-141-110116R

Collected: PM

11/1/2016 1:00:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-142-110116R

Collected: PM

11/1/2016 3:00:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-143-110116R

Collected: AM

11/1/2016 11:20:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-144-110116R

Collected: AM

11/1/2016 8:40:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 2 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613379

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-147-110116R **Collected:** 11/1/2016 9:00:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.014	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-147-110116R **Collected:** 11/1/2016 9:00:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.0080	JN	0.020	LOD	0.040	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-148-110116R **Collected:** 11/1/2016 9:30:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.0059	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-148-110116R **Collected:** 11/1/2016 9:30:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

SDG: K1613506

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-132-110216R **Collected:** 11/2/2016 11:40:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 3 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613506

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-133-110216R **Collected:** 11/2/2016 2:50:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.013	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-134-110216R **Collected:** 11/2/2016 3:50:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-139-110216R **Collected:** 11/2/2016 1:20:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.013	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-145-110216R **Collected:** 11/2/2016 9:40:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms

Sample ID: FTBL-IS-145-110216R **Collected:** 11/2/2016 9:40:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 4 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613506

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-145-110216R
Collected: AM

11/2/2016 9:40:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
NITROGLYCERIN	0.084	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Ms, Ms, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 5 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Lcs	Laboratory Control Spike Lower Estimation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 6 of 6

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1613318

Method Blank Outlier Report

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610099-6	11/19/2016 8:39:00 AM	3-NITROTOLUENE	0.094 mg/Kg	FTBL-1S-080-103116R FTBL-1S-086-103116R FTBL-1S-130-103116R FTBL-1S-131-103116R

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:49 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-1S-086-103116RMSD (FTBL-1S-086-103116R)	2,6-DINITROTOLUENE HMX	- -	76 71	79.00-117.00 74.00-124.00	- -	2,6-DINITROTOLUENE HMX	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:51 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610099-13	1,3,5-TRINITROBENZENE	78	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
KWG1610099-8	2,6-DINITROTOLUENE	78	-	79.00-117.00	-	2,6-DINITROTOLUENE	
(FTBL-1S-080-103116R	2-NITROTOLUENE	65	-	70.00-124.00	-	2-NITROTOLUENE	
FTBL-1S-086-103116R	4-NITROTOLUENE	68	-	71.00-124.00	-	4-NITROTOLUENE	
FTBL-1S-130-103116R	HMX	67	-	74.00-124.00	-	HMX	
FTBL-1S-131-103116R)							

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:53 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-1S-080-103116R	NITROBENZENE	JN	0.0063	0.081	LOQ	mg/Kg	J (all detects)
FTBL-1S-130-103116R	NITROGLYCERIN	JN	0.069	0.21	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:54 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37664A40
 SDG #: K1613318
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/14/16
 Page: 1 of 1
 Reviewer: JVB
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICV $\leq 15\%$ ✓ ICV $\leq 20\%$
III.	Continuing calibration	A	CW $\leq 20\%$
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates LT	N	LT = 1/7/8
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-1S-086-103116R	K1613318-001	Soil	10/31/16
2	FTBL-1S-080-103116R	K1613318-002	Soil	10/31/16
3	FTBL-1S-130-103116R	K1613318-003	Soil	10/31/16
4	FTBL-1S-131-103116R	K1613318-004	Soil	10/31/16
5	FTBL-1S-086-103116RMS	K1613318-001MS	Soil	10/31/16
6	FTBL-1S-086-103116RMSD	K1613318-001MSD	Soil	10/31/16
7	FTBL-1S-086-103116RDUP	K1613318-001DUP	Soil	10/31/16
8	FTBL-1S-086-103116RTRP	K1613318-001TRP	Soil	10/31/16
9				
10				
11				
12				

Notes:

-	KWG 1610099-14				
+	KWG 1610099-6	(SB)			

Quality Control Outlier Reports

K1613379

Method Blank Outlier Report

Lab Reporting Batch ID: K1613379

Laboratory: ALS_K

EDD Filename: K1613379_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610195-7	12/4/2016 5:14:00 AM	3-NITROTOLUENE	0.035 mg/Kg	FTBL-IS-141-110116R FTBL-IS-142-110116R FTBL-IS-143-110116R FTBL-IS-144-110116R FTBL-IS-147-110116R FTBL-IS-148-110116R

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:05 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613379

Laboratory: ALS_K

EDD Filename: K1613379_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610195-5 (FTBL-IS-141-110116R FTBL-IS-142-110116R FTBL-IS-143-110116R FTBL-IS-144-110116R FTBL-IS-147-110116R FTBL-IS-148-110116R)	1,3,5-TRINITROBENZENE HMX	79 73	- -	80.00-116.00 74.00-124.00	- -	1,3,5-TRINITROBENZENE HMX	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:07 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613379

Laboratory: ALS_K

EDD Filename: K1613379_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-IS-147-110116R	2,6-DINITROTOLUENE	JN	0.0080	0.040	LOQ	mg/Kg	J (all detects)
	NITROBENZENE	JN	0.014	0.080	LOQ	mg/Kg	
FTBL-IS-148-110116R	2,6-DINITROTOLUENE	JN	0.0059	0.041	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:08 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37664B40
 SDG #: K1613379
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/14/16
 Page: 1 of 1
 Reviewer: JVL
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICAL $\leq 15\%$ \checkmark ICV $\leq 20\%$
III.	Continuing calibration	A	CV $\leq 20\%$
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-144-110116R	K1613379-001	Soil	11/01/16
2	FTBL-IS-147-110116R	K1613379-002	Soil	11/01/16
3	FTBL-IS-148-110116R	K1613379-003	Soil	11/01/16
4	FTBL-IS-143-110116R	K1613379-004	Soil	11/01/16
5	FTBL-IS-141-110116R	K1613379-005	Soil	11/01/16
6	FTBL-IS-142-110116R	K1613379-006	Soil	11/01/16
7	FTBL-IS-144-110116RMS	K1613379-001MS	Soil	11/01/16
8	FTBL-IS-144-110116RMSD	K1613379-001MSD	Soil	11/01/16
9	FTBL-IS-144-110116RDUP	K1613379-001DUP	Soil	11/01/16
10	FTBL-IS-144-110116RTRP	K1613379-001TRP	Soil	11/01/16
11				
12				

Notes:

+	KWG1610195-7	(SB)			
-	-S	(SB)			

Quality Control Outlier Reports

K1613506

Method Blank Outlier Report

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610337-7	11/17/2016 7:12:00 PM	3-NITROTOLUENE	0.023 mg/Kg	FTBL-IS-132-110216R FTBL-IS-133-110216R FTBL-IS-134-110216R FTBL-IS-139-110216R FTBL-IS-145-110216R

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:33 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-145-110216RMS	1,3,5-TRINITROBENZENE	44	72	80.00-116.00	48 (20.00)	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
FTBL-IS-145-110216RMSD	1,3-DINITROBENZENE	54	-	73.00-119.00	35 (20.00)	1,3-DINITROBENZENE	
(FTBL-IS-145-110216R)	2,4,6-TRINITROTOLUENE	51	-	71.00-120.00	38 (20.00)	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	56	-	75.00-121.00	35 (20.00)	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	54	76	79.00-117.00	34 (20.00)	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	53	-	71.00-123.00	35 (20.00)	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	53	-	70.00-124.00	36 (20.00)	2-NITROTOLUENE	
	3-NITROTOLUENE	54	-	67.00-129.00	34 (20.00)	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	51	-	64.00-127.00	34 (20.00)	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	53	-	71.00-124.00	36 (20.00)	4-NITROTOLUENE	
	HMX	46	65	74.00-124.00	35 (20.00)	HMX	
	NITROBENZENE	55	-	67.00-129.00	37 (20.00)	NITROBENZENE	
	NITROGLYCERIN	58	-	73.00-124.00	32 (20.00)	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	59	-	72.00-128.00	29 (20.00)	Pentaerythritol Tetranitrate (PETN)	
	RDX	51	-	67.00-129.00	34 (20.00)	RDX	
	Tetryl	38	63	68.00-135.00	50 (20.00)	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:35 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610337-3 (FTBL-IS-132-110216R FTBL-IS-133-110216R FTBL-IS-134-110216R FTBL-IS-139-110216R FTBL-IS-145-110216R)	HMX	69	-	74.00-124.00	-	HMX	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:37 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-133-110216R	NITROBENZENE	JN	0.013	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-139-110216R	NITROBENZENE	JN	0.013	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-145-110216R	NITROGLYCERIN	JN	0.084	0.21	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:38 AM

ADR version 1.9.0.325

Page 1 of 1

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: December 21, 2016

Parameters: Explosives

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1613506

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-145-110216R	K1613506-001	Soil	11/02/16
FTBL-IS-132-110216R	K1613506-002	Soil	11/02/16
FTBL-IS-139-110216R	K1613506-003	Soil	11/02/16
FTBL-IS-133-110216R	K1613506-004	Soil	11/02/16
FTBL-IS-134-110216R	K1613506-005	Soil	11/02/16
FTBL-IS-145-110216RMS	K1613506-001MS	Soil	11/02/16
FTBL-IS-145-110216RMSD	K1613506-001MSD	Soil	11/02/16
FTBL-IS-145-110216RDUP	K1613506-001DUP	Soil	11/02/16
FTBL-IS-145-110216RTRP	K1613506-001TRP	Soil	11/02/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 15.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

Retention time windows were established as required by the method.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG1610337-7	11/11/16	3-Nitrotoluene	0.023 mg/Kg	All samples in SDG K1613506

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates/Triplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
FTBL-IS-145-110216RMS/MSD (FTBL-IS-145-110216R)	HMX	46 (74-124)	65 (74-124)	J (all detects) UJ (all non-detects)	A
	RDX	51 (67-129)	72 (67-129)		
	1,3,5-Trinitrobenzene	44 (80-116)	72 (80-116)		
	1,3-Dinitrobenzene	54 (73-119)	77 (73-119)		
	TETRYL	38 (68-135)	63 (68-135)		
	Nitrobenzene	55 (67-129)	79 (67-129)		
	4-Amino-2,6-dinitrotoluene	51 (64-127)	72 (64-127)		
	2-Amino-4,6-dinitrotoluene	53 (71-123)	76 (71-123)		
	2,4,6-Trinitrotoluene	51 (71-120)	75 (71-120)		
	2,6-Dinitrotoluene	54 (79-117)	76 (79-117)		
	2,4-Dinitrotoluene	56 (75-121)	79 (75-121)		
	2-Nitrotoluene	53 (70-124)	76 (70-124)		
	4-Nitrotoluene	53 (71-124)	77 (71-124)		
	3-Nitrotoluene	54 (67-129)	76 (67-129)		
	Nitroglycerin	58 (73-124)	81 (73-124)		
	Pentaerythritol Tetranitrate	59 (72-128)	80 (72-128)		

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
FTBL-IS-145-110216RMS/MSD (FTBL-IS-145-110216R)	HMX	35 (≤20)	NA	-
	RDX	34 (≤20)		
	1,3,5-Trinitrobenzene	48 (≤20)		
	1,3-Dinitrobenzene	35 (≤20)		
	TETRYL	50 (≤20)		
	Nitrobenzene	37 (≤20)		
	4-Amino-2,6-dinitrotoluene	34 (≤20)		
	2-Amino-4,6-dinitrotoluene	35 (≤20)		
	2,4,6-Trinitrotoluene	38 (≤20)		
	2,6-Dinitrotoluene	34 (≤20)		
	2,4-Dinitrotoluene	35 (≤20)		
	2-Nitrotoluene	36 (≤20)		
	4-Nitrotoluene	36 (≤20)		
	3-Nitrotoluene	34 (≤20)		
	Pentaerythritol Tetranitrate	29 (≤20)		
FTBL-IS-145-110216RMS/MSD (FTBL-IS-145-110216R)	Nitroglycerin	32 (≤20)	J (all detects)	A

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
KWG61610337-3 (All samples in SDG K1613506)	HMX	69 (74-124)	NA	UJ (all non-detects)	P

Relative percent differences (RPD) were within QC limits.

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
FTBL-IS-145-110216R	Nitroglycerin	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	P
FTBL-IS-139-110216R FTBL-IS-133-110216R	Nitrobenzene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	P

XI. Target Compound Identifications

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and RPD and LCS/LCSD %R, data were qualified as estimated in five samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Explosives - Data Qualification Summary - SDG K1613506

Sample	Compound	Flag	A or P	Reason
FTBL-IS-145-110216R FTBL-IS-139-110216R	HMX RDX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene TETRYL Nitrobenzene 4-Amino-2,6-dinitrotoluene 2-Amino-4,6-dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene Nitroglycerin Pentaerythritol Tetranitrate	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
FTBL-IS-145-110216R FTBL-IS-139-110216R	Nitroglycerin	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
FTBL-IS-145-110216R FTBL-IS-132-110216R FTBL-IS-139-110216R FTBL-IS-133-110216R FTBL-IS-134-110216R	HMX	UJ (all non-detects)	P	Laboratory control samples (%R)
FTBL-IS-145-110216R	Nitroglycerin	NJ (all detects)	P	Compound quantitation (no confirmation)
FTBL-IS-139-110216R FTBL-IS-133-110216R	Nitrobenzene	NJ (all detects)	P	Compound quantitation (no confirmation)

Fort Bliss, Castner Range
Explosives - Laboratory Blank Data Qualification Summary - SDG K1613506

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Explosives - Field Blank Data Qualification Summary - SDG K1613506

No Sample Data Qualified in this SDG

LDC #: 37664C40
 SDG #: K1613506
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 12/14/16
 Page: 1 of 1
 Reviewer: SV
 2nd Reviewer: SV

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICAL ≤ 15% ICV ≤ 20%
III.	Continuing calibration	A	CV ≤ 20%
IV.	Laboratory Blanks	SW	
V.	Field blanks	U	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates/LT	SW/A	LT = 1/8/19
VIII.	Laboratory control samples	SW	LCS / SRM
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SW	
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-145-110216R	K1613506-001	Soil	11/02/16
2	FTBL-IS-132-110216R	K1613506-002	Soil	11/02/16
3	FTBL-IS-139-110216R	K1613506-003	Soil	11/02/16
4	FTBL-IS-133-110216R	K1613506-004	Soil	11/02/16
5	FTBL-IS-134-110216R	K1613506-005	Soil	11/02/16
6	FTBL-IS-145-110216RMS	K1613506-001MS	Soil	11/02/16
7	FTBL-IS-145-110216RMSD	K1613506-001MSD	Soil	11/02/16
8	FTBL-IS-145-110216RDUP	K1613506-001DUP	Soil	11/02/16
9	FTBL-IS-145-110216RTRP	K1613506-001TRP	Soil	11/02/16
10				
11				
12				

Notes:

7	kw G 1610 337-4				
+	↓ -7 (SB)				

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 20\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Field Blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

LDC #: 37664Cfd

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: JVG
2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		/		
Were target compounds detected in the field duplicates?			/	
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	X. EPN	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	Y. Azinphos-methyl	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	Z. Coumaphos	EE. Ethyl Benzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	AA. Parathion	SSS. O-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	BB. Trichloronate	RRR. MP-Xylene
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	CC. Trichlorinate	GG. Total Xylene
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotep	DD. Trifluralin	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	EE. Def	8315A
I. Chrysené	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	FF. Prowl	A. Formaldehyde
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	GG. Ethion	B. Acetaldehyde
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	HH. Famphur	C. Benzaldehyde
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	II. Phosmet	D. Butyraldehyde
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	JJ. Tetrachlorvinphos	
N. Naphthalene	N. 4-Nitrotoluene	N. Dichloroprop	N. Malathion	KK. Demeton (total)	
O. Phenanthrene	O. Nitroglycerin	O.	O. Chlorpyrifos		
P. Pyrene	P. Picric acid	P.	P. Fenthion		
Q.	Q. 2,4-Dinitrophenol	Q.	Q. Parathion-ethyl		
R.	R. 3,5-Dinitroaniline		R. Trichlorate		
S.	S. 2-Nitrophenol		S. Merphos		
	T. 4-Nitrophenol		T. Stirofos		
	U. Picramic acid		U. Tokuthion		
	V. PETN		V. Fensulfothion		
			W. Bolstar		

Notes:

LDC #: 37664 C40

VALIDATION FINDINGS WORKSHEET

BlanksPage: 1 of 1Reviewer: JVG2nd Reviewer: [Signature]METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a given method blank?Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?Y N N/A Was a method blank performed with each extraction batch?Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only

Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤ 20 samples?Blank extraction date: 11/11/16 Blank analysis date: 11/17/16Associated samples: All (K2)Conc. units: mg/kg

Compound	Blank ID	Sample Identification									
	KWG1610337-7										
M	0.023										

Blank extraction date: _____

Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification									

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".

Y/N	N/A	Did all surrogate recoveries (%R) meet the QC limits?

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	H	Ortho-Terphenyl	O	Decachlorobiphenyl (DCB)	V	Tri-n-propyltin	CC	2,5-Dibromotoluene
B	4-Bromofluorobenzene (BFB)	I	Fluorobenzene (FBZ)	P	1-methylnaphthalene	W	Tributyl Phosphate	DD	n-Nonatriacontane
C	a,a,a-Trifluorotoluene	J	n-Triacontane	Q	Dichlorophenyl Acetic Acid (DCAA)	X	Triphenyl Phosphate	EE	1,2-Dibromopropane
D	Bromochlorobenene	K	Hexacosane	R	4-Nitrophenol	Y	Tetrachloro-m- xylene	FF	1,2-Dinitrobenzene
E	1,4-Dichlorobutane	L	Bromobenzene	S	1-Chloro-3-Nitrobenzene	Z	2-Bromonaphthalene	GG	2-Nitro-m-xylene
F	1,4-Difluorobenzene (DFB)	M	Benzo(e)Pyrene	T	3,4-Dinitrotoluene	AA	1-Chlorooctadecane	HH	p-Terphenyl
G	Octacosane	N	Terphenyl-D14	U	Triptyltin	BB	2,4-Dichlorophenylacetic acid	II	


LDC #: 31664C40

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: 

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y	N	N/A	Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
---	---	-----	--

Y(N) N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

[illegible]

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ARCADIS U.S., Inc.
 Project: Closed Castner Firing Range/06261038.0001.00400
 Sample Matrix: Soil

Service Request: K1613506
 Date Extracted: 11/11/2016
 Date Analyzed: 11/17/2016

Matrix Spike/Duplicate Matrix Spike Summary
 Nitroaromatics and Nitramines (Explosives)

6/7

Sample Name: FTBL-IS-145-110216R
 Lab Code: K1613506-001
 Extraction Method: METHOD
 Analysis Method: 8330B

Units: mg/Kg
 Basis: Dry
 Level: Low
 Extraction Lot: KWG1610337

Analyte Name	Sample Result	FTBL-IS-145-110216RMS KWG1610337-1 Matrix Spike				FTBL-IS-145-110216RDMS KWG1610337-2 Duplicate Matrix Spike				%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	MS %Rec		Result	Spike Amount	MSD %Rec				
HMX	A	ND	0.927	2.02	46 *	1.32	2.03	65 (74-124)	130	35 *	20	J/MS/A
RDX	B	ND	1.04	2.02	51	1.47	2.03	72 (67-124)	6-121	34 *	20	
1,3,5-Trinitrobenzene	C	ND	0.889	2.02	44	1.45	2.03	72 (80-116)	36-137	48 *	20	
1,3-Dinitrobenzene	D	ND	1.10	2.02	54	1.56	2.03	77 (73-119)	14-131	35 *	20	
TETRYL	E	ND	0.762	2.02	38 *	1.27	2.03	63 (68-135)	52-130	50 *	20	
Nitrobenzene	F	ND	1.11	2.02	55	1.61	2.03	79 (67-124)	10-117	37 *	20	
4-Amino-2,6-dinitrotoluene	H	ND	1.03	2.02	51 *	1.45	2.03	72 (64-127)	56-125	34 *	20	
2-Amino-4,6-dinitrotoluene	I	ND	1.08	2.02	53 *	1.54	2.03	76 (71-123)	59-125	35 *	20	
2,4,6-Trinitrotoluene	G	ND	1.04	2.02	51 *	1.52	2.03	75 (71-120)	56-137	38 *	20	
2,6-Dinitrotoluene	K	ND	1.09	2.02	54 *	1.54	2.03	76 (79-117)	63-129	34 *	20	
2,4-Dinitrotoluene	J	ND	1.13	2.02	56 *	1.60	2.03	79 (75-121)	65-133	35 *	20	
2-Nitrotoluene	L	ND	1.07	2.02	53 *	1.54	2.03	76 (70-124)	58-119	36 *	20	
4-Nitrotoluene	N	ND	1.08	2.02	53 *	1.55	2.03	77 (71-124)	61-121	36 *	20	
3-Nitrotoluene	M	ND	1.09	2.02	54 *	1.54	2.03	76 (67-124)	62-117	34 *	20	
Nitroglycerin	O	0.084 Det	1.25	2.02	58	1.72	2.03	81 (73-124)	56-139	32 *	20	
Pentaerythritol Tetranitrate (PETN)	V	ND	1.20	2.02	59 *	1.61	2.03	80 (72-128)	65-127	29 *	20	

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1 of 2

QA/QC Report

Client: ARCADIS U.S., Inc.
 Project: Closed Castner Firing Range/06261038.0001.00400
 Sample Matrix: Soil

Service Request: K1613506
 Date Extracted: 11/11/2016
 Date Analyzed: 11/17/2016

Matrix Spike/Duplicate Matrix Spike Summary
 Nitroaromatics and Nitramines (Explosives)

6/7

Sample Name: FTBL-IS-145-110216R
 Lab Code: K1613506-001
 Extraction Method: METHOD
 Analysis Method: 8330B

Units: mg/Kg
 Basis: Dry
 Level: Low
 Extraction Lot: KWG1610337

Analyte Name	Sample Result	FTBL-IS-145-110216RMS KWG1610337-1 Matrix Spike				FTBL-IS-145-110216RDMS KWG1610337-2 Duplicate Matrix Spike				%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec		Result	Spike Amount	%Rec				
HMX	A ND	0.927	2.02	46 *		1.32	2.03	65		61-130	35 *	20
RDX	B ND	1.04	2.02	51		1.47	2.03	72		16-121	34 *	20
1,3,5-Trinitrobenzene	C ND	0.889	2.02	44		1.45	2.03	72		36-137	48 *	20
1,3-Dinitrobenzene	D ND	1.10	2.02	54		1.56	2.03	77		44-131	35 *	20
TETRYL	E ND	0.762	2.02	38 *		1.27	2.03	63		62-130	50 *	20
Nitrobenzene	F ND	1.11	2.02	55		1.61	2.03	79		40-117	37 *	20
4-Amino-2,6-dinitrotoluene	H ND	1.03	2.02	51 *		1.45	2.03	72		66-125	34 *	20
2-Amino-4,6-dinitrotoluene	I ND	1.08	2.02	53 *		1.54	2.03	76		69-125	35 *	20
2,4,6-Trinitrotoluene	G ND	1.04	2.02	51 *		1.52	2.03	75		56-137	38 *	20
2,6-Dinitrotoluene	K ND	1.09	2.02	54 *		1.54	2.03	76		63-129	34 *	20
2,4-Dinitrotoluene	J ND	1.13	2.02	56 *		1.60	2.03	79		65-133	35 *	20
2-Nitrotoluene	L ND	1.07	2.02	53 *		1.54	2.03	76		58-119	36 *	20
4-Nitrotoluene	N ND	1.08	2.02	53 *		1.55	2.03	77		61-121	36 *	20
3-Nitrotoluene	M ND	1.09	2.02	54 *		1.54	2.03	76		62-117	34 *	20
Nitroglycerin	O 0.084 (Det)	1.25	2.02	58		1.72	2.03	81		56-139	32 *	20
Pentaerythritol Tetranitrate	V ND	1.20	2.02	59 *		1.61	2.03	80		65-127	29 *	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

2 of 2

LDC #: 37664 C40

VALIDATION FINDINGS WORKSHEET

Laboratory Control Samples (LCS)

Page: 1 of 1

Reviewer: JVG

2nd Reviewer:

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

[illegible]

LDC #: 37664C40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: JVG
2nd Reviewer: _____

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y/N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y (N) N/A	Did the percent difference of detected compounds between two columns./detectors $\leq 40\%$?
-----------	---

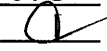
If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

LDC #: 37664C40

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: 

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = $100 * (S/X)$

Where:

A = Area of compound

C = Concentration of compound

S = Standard deviation of calibration factors

X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (1000 std)	Recalculated CF (1000 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HPLC LC08	6/8/2016	HMX (Ultra Aromax)	17300	17346	17100	17056	4.7	4.6
			2,4,6-TNT (Ultra Aromax)	46200	46239	42200	42157	6.3	6.2
	ICAL HPLC LC10	7/13/2016	HMX (Synergi Hydro R)	14400	14390	14200	14200	12.1	12.0
			2,4,6-TNT (Synergi Hydro R)	41800	41765	42200	42200	0.7	0.7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification**METHOD: HPLC Explosives (EPA SW 846 Method 8330B)**

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

$$\text{Percent difference (\%D)} = 100 * (N - C)/N$$

Where:

N = Initial Calibration Factor or Nominal Amount

C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc	Reported Conc	Recalculated Conc	Reported % D	Recalculated %D
1	15000103 LC08	11/15/2016	HMX (Ultra Aromax)	1000	1043	1040	4	4
			2,4,6-TNT (Ultra Aromax)	1000	996	995	1	1
2	15000113 LC08	11/16/2016	HMX (Ultra Aromax)	1000	1057	1054	5	5
			2,4,6-TNT (Ultra Aromax)	1000	1020	1019	2	2
3	17000113 LC10	11/17/2016	HMX (Synergi Hydro R)	1000	856	855	14	14
			2,4,6-TNT (Synergi Hydro R)	1000	989	989	1	1
4	17000124 LC10	11/17/2016	HMX (Synergi Hydro R)	1000	861	860	14	14
			2,4,6-TNT (Synergi Hydro R)	1000	998	998	0	0

LDC #: 37664 C40

VALIDATION FINDINGS WORKSHEET **Surrogate Results Verification**

Page: 1 of 1Reviewer: JVG2nd reviewer: [Signature]METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate SpikedSample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
S	LC10	5000	2876	58	58	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	H	Ortho-Terphenyl	O	Decachlorobiphenyl (DCB)	V	Tri-n-propyltin	CC	2,5-Dibromotoluene
B	4-Bromofluorobenzene (BFB)	I	Fluorobenzene (FBZ)	P	1-methylnaphthalene	W	Tributyl Phosphate	DD	n-Nonatriacontane
C	a,a,a-Trifluorotoluene	J	n-Triacontane	Q	Dichlorophenyl Acetic Acid (DCAA)	X	Triphenyl Phosphate	EE	1,2-Dibromopropane
D	Bromochlorobenene	K	Hexacosane	R	4-Nitrophenol	Y	Tetrachloro-m- xylene	FF	1,2-Dinitrobenzene
E	1,4-Dichlorobutane	L	Bromobenzene	S	1-Chloro-3-Nitrobenzene	Z	2-Bromonaphthalene	GG	2-Nitro-m-xylene
F	1,4-Difluorobenzene (DFB)	M	Benzo(e)Pyrene	T	3,4-Dinitrotoluene	AA	1-Chlorooctadecane	HH	p-Terphenyl
G	Octacosane	N	Terphenyl-D14	U	Triphenyltin	BB	2,4-DCEPA	II	

LDC #: 37664040

VALIDATION FINDINGS WORKSHEET **Matrix Spike/Matrix Spike Duplicates Results Verification**

Page: 1 of 1Reviewer: JVG2nd Reviewer: CLMETHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where

SSC = Spiked sample concentration

MS = Matrix spike

SC = Sample concentration

MSD = Matrix spike duplicate

SA = Spike added

$$\text{RPD} = ((\text{SSCMS} - \text{SSCMSD}) * 2) / (\text{SSCMS} + \text{SSCMSD}) * 100$$

MS/MSD samples: 6/7

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike		Matrix Spike Duplicate		MS/MSD		
	MS	MSD		---	MS	MSD	Percent Recovery		Percent Recovery		RPD	
							Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)												
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)	2.02	2.03	0	0.927	1.32	46	46	65	65	35	35	
2,4,6-Trinitrotoluene (8330)	1	1	1	1.04	1.94	51	51	75	75	36	38	
Phorate (8141A)												
Malathion (8141A)												
Formaldehyde (8315A)												

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 37664040

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1Laboratory Control Sample/Laboratory Control Sample Duplicates Results VerificationReviewer: JVG
2nd Reviewer: [Signature]METHOD: GC / HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)

RPD = (((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD)) * 100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample

SA = Spike added

LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: KWG1616377-3

Compound	Spike Added (mg/kg)		Spike Sample Concentration (mg/kg)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)	2.00	MA	1.37	MA	69	69				
2,4,6-Trinitrotoluene (8330)	↓	↓	1.42	↓	81	81				
Phorate (8141A)										
Malathion (8141A)										
Formaldehyde (8315A)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 37664 C40**VALIDATION FINDINGS WORKSHEET**
Sample Calculation VerificationPage: 1 of 1
Reviewer: JVG
2nd Reviewer: [Signature]METHOD: GC / HPLC(Y) N N/A
(Y) N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

Example:

Sample ID. 3 Compound Name Nitrobenzene LC10Concentration = $\frac{(602759)(8 \text{ ml})}{(37200)(10.065 \text{ g})(0.983)(1000)} = 0.013 \text{ mg/kg}$ A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound
In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

#	Sample ID	Compound	Reported Concentrations (<u>mg/kg</u>)	Recalculated Results Concentrations (<u> </u>)	Qualifications
			0.013		

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

December 22, 2016

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on December 6, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37664:

SDG

K1613318, K1613379, K1613506

Fraction:

Explosives

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1613318, K1613379, and K1613506

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

December 22, 2016

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the October through November 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample (LCS), laboratory triplicate samples (TRP), and sample reference materials (SRM). Approximately 33 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprised a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks with the exception of three blanks for 3-nitrotoluene. The associated sample concentrations were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank and no data were qualified.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives in two MS/MSD pairs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details are provided in Enclosure I.

VIII. Triplicate Sample Analysis

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

IX. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

X. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613318/ 8330B	FTBL-1S-080-103116R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613318/ 8330B	FTBL-1S-130-103116R	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613379/ 8330B	FTBL-IS-147-110116R	2,6-Dinitrotoluene Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613379/ 8330B	FTBL-IS-148-110116R	2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613506/ 8330B	FTBL-IS-133-110216R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613506/ 8330B	FTBL-IS-139-110216R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613506/ 8330B	FTBL-IS-145-110216R	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in these SDGs.

Due to LCS and SRM %R exceedances, data were qualified as estimated in fifteen samples.

Due to MS/MSD %R and RPD, data were qualified as estimated in two samples.

Due to results not being confirmed, data were qualified as presumptive in seven samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
31-Oct-2016	FTBL-1S-086-103116R	K1613318-001	N	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RMSD	KWG1610099-10	MSD	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RREP1	KWG1610099-2	DUP	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RREP3	KWG1610099-4	DUP	METHOD	8330B	III
31-Oct-2016	FTBL-1S-086-103116RMS	KWG1610099-9	MS	METHOD	8330B	III
31-Oct-2016	FTBL-1S-080-103116R	K1613318-002	N	METHOD	8330B	III
31-Oct-2016	FTBL-1S-130-103116R	K1613318-003	N	METHOD	8330B	III
31-Oct-2016	FTBL-1S-131-103116R	K1613318-004	N	METHOD	8330B	III
01-Nov-2016	FTBL-IS-144-110116R	K1613379-001	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RREP1	KWG1610195-1	DUP	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RREP3	KWG1610195-2	DUP	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RMS	KWG1610195-3	MS	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-144-110116RMSD	KWG1610195-4	MSD	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-147-110116R	K1613379-002	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-148-110116R	K1613379-003	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-143-110116R	K1613379-004	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-141-110116R	K1613379-005	N	EPA 3535A	8330B	III
01-Nov-2016	FTBL-IS-142-110116R	K1613379-006	N	EPA 3535A	8330B	III
02-Nov-2016	FTBL-IS-145-110216R	K1613506-001	N	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RMS	KWG1610337-1	MS	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RMSD	KWG1610337-2	MSD	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RREP1	KWG1610337-5	DUP	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-145-110216RREP3	KWG1610337-6	DUP	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-132-110216R	K1613506-002	N	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-139-110216R	K1613506-003	N	METHOD	8330B	IV
02-Nov-2016	FTBL-IS-133-110216R	K1613506-004	N	METHOD	8330B	IV

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
02-Nov-2016	FTBL-IS-134-110216R	K1613506-005	N	METHOD	8330B	IV

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A, K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613318

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-1S-080-103116R 10/31/2016 10:50:00 Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0063	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-1S-086-103116R 10/31/2016 9:00:00 Collected: AM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs

Sample ID: FTBL-1S-130-103116R 10/31/2016 1:00:00 Collected: PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.069	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-1S-131-103116R 10/31/2016 3:00:00 Collected: PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 1 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A, K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613318

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-131-103116R Collected: 10/31/2016 3:00:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

SDG: K1613379

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-141-110116R Collected: 11/1/2016 1:00:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-142-110116R Collected: 11/1/2016 3:00:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-143-110116R Collected: 11/1/2016 11:20:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-144-110116R Collected: 11/1/2016 8:40:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 2 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613379

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-147-110116R **Collected:** 11/1/2016 9:00:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.014	JN	0.020	LOD	0.080	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-147-110116R **Collected:** 11/1/2016 9:00:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.0080	JN	0.020	LOD	0.040	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-148-110116R **Collected:** 11/1/2016 9:30:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.0059	JN	0.021	LOD	0.041	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-148-110116R **Collected:** 11/1/2016 9:30:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

SDG: K1613506

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-132-110216R **Collected:** 11/2/2016 11:40:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 3 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613506

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-133-110216R
Collected: 11/2/2016 2:50:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.013	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-134-110216R
Collected: 11/2/2016 3:50:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-139-110216R
Collected: 11/2/2016 1:20:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.013	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-145-110216R
Collected: 11/2/2016 9:40:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms

Sample ID: FTBL-IS-145-110216R
Collected: 11/2/2016 9:40:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 4 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613506

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-145-110216R

Collected: AM

11/2/2016 9:40:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Ms
NITROGLYCERIN	0.084	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Ms, Ms, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 5 of 6

Data Qualifier Summary

Lab Reporting Batch ID: K1613318, K1613379, K1613506

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A, K1613379_SEDD2A,
K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Lcs	Laboratory Control Spike Lower Estimation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:31:44 AM

ADR version 1.9.0.325

Page 6 of 6

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1613318

Method Blank Outlier Report

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610099-6	11/19/2016 8:39:00 AM	3-NITROTOLUENE	0.094 mg/Kg	FTBL-1S-080-103116R FTBL-1S-086-103116R FTBL-1S-130-103116R FTBL-1S-131-103116R

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:49 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-1S-086-103116RMSD (FTBL-1S-086-103116R)	2,6-DINITROTOLUENE HMX	- -	76 71	79.00-117.00 74.00-124.00	- -	2,6-DINITROTOLUENE HMX	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:51 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610099-13	1,3,5-TRINITROBENZENE	78	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
KWG1610099-8	2,6-DINITROTOLUENE	78	-	79.00-117.00	-	2,6-DINITROTOLUENE	
(FTBL-1S-080-103116R	2-NITROTOLUENE	65	-	70.00-124.00	-	2-NITROTOLUENE	
FTBL-1S-086-103116R	4-NITROTOLUENE	68	-	71.00-124.00	-	4-NITROTOLUENE	
FTBL-1S-130-103116R	HMX	67	-	74.00-124.00	-	HMX	
FTBL-1S-131-103116R)							

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:53 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613318

Laboratory: ALS_K

EDD Filename: K1613318_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-1S-080-103116R	NITROBENZENE	JN	0.0063	0.081	LOQ	mg/Kg	J (all detects)
FTBL-1S-130-103116R	NITROGLYCERIN	JN	0.069	0.21	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:03:54 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37664A40
 SDG #: K1613318
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/14/16
 Page: 1 of 1
 Reviewer: JVB
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICV $\leq 15\%$ ✓ ICV $\leq 20\%$
III.	Continuing calibration	A	CW $\leq 20\%$
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates /LT	N	LT = 1/7/8
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-1S-086-103116R	K1613318-001	Soil	10/31/16
2	FTBL-1S-080-103116R	K1613318-002	Soil	10/31/16
3	FTBL-1S-130-103116R	K1613318-003	Soil	10/31/16
4	FTBL-1S-131-103116R	K1613318-004	Soil	10/31/16
5	FTBL-1S-086-103116RMS	K1613318-001MS	Soil	10/31/16
6	FTBL-1S-086-103116RMSD	K1613318-001MSD	Soil	10/31/16
7	FTBL-1S-086-103116RDUP	K1613318-001DUP	Soil	10/31/16
8	FTBL-1S-086-103116RTRP	K1613318-001TRP	Soil	10/31/16
9				
10				
11				
12				

Notes:

-	KWG 1610099-14				
+	KWG 1610099-6	(SB)			

Quality Control Outlier Reports

K1613379

Method Blank Outlier Report

Lab Reporting Batch ID: K1613379

Laboratory: ALS_K

EDD Filename: K1613379_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610195-7	12/4/2016 5:14:00 AM	3-NITROTOLUENE	0.035 mg/Kg	FTBL-IS-141-110116R FTBL-IS-142-110116R FTBL-IS-143-110116R FTBL-IS-144-110116R FTBL-IS-147-110116R FTBL-IS-148-110116R

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:05 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613379

Laboratory: ALS_K

EDD Filename: K1613379_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610195-5 (FTBL-IS-141-110116R FTBL-IS-142-110116R FTBL-IS-143-110116R FTBL-IS-144-110116R FTBL-IS-147-110116R FTBL-IS-148-110116R)	1,3,5-TRINITROBENZENE HMX	79 73	- -	80.00-116.00 74.00-124.00	- -	1,3,5-TRINITROBENZENE HMX	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:07 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613379

Laboratory: ALS_K

EDD Filename: K1613379_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-IS-147-110116R	2,6-DINITROTOLUENE	JN	0.0080	0.040	LOQ	mg/Kg	J (all detects)
	NITROBENZENE	JN	0.014	0.080	LOQ	mg/Kg	
FTBL-IS-148-110116R	2,6-DINITROTOLUENE	JN	0.0059	0.041	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:08 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37664B40
 SDG #: K1613379
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/14/16
 Page: 1 of 1
 Reviewer: JVL
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICAL $\leq 15\%$ \checkmark ICV $\leq 20\%$
III.	Continuing calibration	A	CV $\leq 20\%$
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-144-110116R	K1613379-001	Soil	11/01/16
2	FTBL-IS-147-110116R	K1613379-002	Soil	11/01/16
3	FTBL-IS-148-110116R	K1613379-003	Soil	11/01/16
4	FTBL-IS-143-110116R	K1613379-004	Soil	11/01/16
5	FTBL-IS-141-110116R	K1613379-005	Soil	11/01/16
6	FTBL-IS-142-110116R	K1613379-006	Soil	11/01/16
7	FTBL-IS-144-110116RMS	K1613379-001MS	Soil	11/01/16
8	FTBL-IS-144-110116RMSD	K1613379-001MSD	Soil	11/01/16
9	FTBL-IS-144-110116RDUP	K1613379-001DUP	Soil	11/01/16
10	FTBL-IS-144-110116RTRP	K1613379-001TRP	Soil	11/01/16
11				
12				

Notes:

+	KWG1610195-7	(SB)			
-	-S	(SB)			

Quality Control Outlier Reports

K1613506

Method Blank Outlier Report

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610337-7	11/17/2016 7:12:00 PM	3-NITROTOLUENE	0.023 mg/Kg	FTBL-IS-132-110216R FTBL-IS-133-110216R FTBL-IS-134-110216R FTBL-IS-139-110216R FTBL-IS-145-110216R

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:33 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-145-110216RMS	1,3,5-TRINITROBENZENE	44	72	80.00-116.00	48 (20.00)	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
FTBL-IS-145-110216RMSD	1,3-DINITROBENZENE	54	-	73.00-119.00	35 (20.00)	1,3-DINITROBENZENE	
(FTBL-IS-145-110216R)	2,4,6-TRINITROTOLUENE	51	-	71.00-120.00	38 (20.00)	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	56	-	75.00-121.00	35 (20.00)	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	54	76	79.00-117.00	34 (20.00)	2,6-DINITROTOLUENE	
	2-AMINO-4,6-DINITROTOLUENE	53	-	71.00-123.00	35 (20.00)	2-AMINO-4,6-DINITROTOLUENE	
	2-NITROTOLUENE	53	-	70.00-124.00	36 (20.00)	2-NITROTOLUENE	
	3-NITROTOLUENE	54	-	67.00-129.00	34 (20.00)	3-NITROTOLUENE	
	4-Amino-2,6-Dinitrotoluene	51	-	64.00-127.00	34 (20.00)	4-Amino-2,6-Dinitrotoluene	
	4-NITROTOLUENE	53	-	71.00-124.00	36 (20.00)	4-NITROTOLUENE	
	HMX	46	65	74.00-124.00	35 (20.00)	HMX	
	NITROBENZENE	55	-	67.00-129.00	37 (20.00)	NITROBENZENE	
	NITROGLYCERIN	58	-	73.00-124.00	32 (20.00)	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	59	-	72.00-128.00	29 (20.00)	Pentaerythritol Tetranitrate (PETN)	
	RDX	51	-	67.00-129.00	34 (20.00)	RDX	
	Tetryl	38	63	68.00-135.00	50 (20.00)	Tetryl	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:35 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610337-3 (FTBL-IS-132-110216R FTBL-IS-133-110216R FTBL-IS-134-110216R FTBL-IS-139-110216R FTBL-IS-145-110216R)	HMX	69	-	74.00-124.00	-	HMX	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:37 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613506

Laboratory: ALS_K

EDD Filename: K1613506_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-133-110216R	NITROBENZENE	JN	0.013	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-139-110216R	NITROBENZENE	JN	0.013	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-145-110216R	NITROGLYCERIN	JN	0.084	0.21	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/15/2016 10:04:38 AM

ADR version 1.9.0.325

Page 1 of 1

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: December 21, 2016

Parameters: Explosives

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1613506

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-145-110216R	K1613506-001	Soil	11/02/16
FTBL-IS-132-110216R	K1613506-002	Soil	11/02/16
FTBL-IS-139-110216R	K1613506-003	Soil	11/02/16
FTBL-IS-133-110216R	K1613506-004	Soil	11/02/16
FTBL-IS-134-110216R	K1613506-005	Soil	11/02/16
FTBL-IS-145-110216RMS	K1613506-001MS	Soil	11/02/16
FTBL-IS-145-110216RMSD	K1613506-001MSD	Soil	11/02/16
FTBL-IS-145-110216RDUP	K1613506-001DUP	Soil	11/02/16
FTBL-IS-145-110216RTRP	K1613506-001TRP	Soil	11/02/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 15.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

Retention time windows were established as required by the method.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG1610337-7	11/11/16	3-Nitrotoluene	0.023 mg/Kg	All samples in SDG K1613506

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates/Triplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
FTBL-IS-145-110216RMS/MSD (FTBL-IS-145-110216R)	HMX	46 (74-124)	65 (74-124)	J (all detects) UJ (all non-detects)	A
	RDX	51 (67-129)	72 (67-129)		
	1,3,5-Trinitrobenzene	44 (80-116)	72 (80-116)		
	1,3-Dinitrobenzene	54 (73-119)	77 (73-119)		
	TETRYL	38 (68-135)	63 (68-135)		
	Nitrobenzene	55 (67-129)	79 (67-129)		
	4-Amino-2,6-dinitrotoluene	51 (64-127)	72 (64-127)		
	2-Amino-4,6-dinitrotoluene	53 (71-123)	76 (71-123)		
	2,4,6-Trinitrotoluene	51 (71-120)	75 (71-120)		
	2,6-Dinitrotoluene	54 (79-117)	76 (79-117)		
	2,4-Dinitrotoluene	56 (75-121)	79 (75-121)		
	2-Nitrotoluene	53 (70-124)	76 (70-124)		
	4-Nitrotoluene	53 (71-124)	77 (71-124)		
	3-Nitrotoluene	54 (67-129)	76 (67-129)		
	Nitroglycerin	58 (73-124)	81 (73-124)		
	Pentaerythritol Tetranitrate	59 (72-128)	80 (72-128)		

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
FTBL-IS-145-110216RMS/MSD (FTBL-IS-145-110216R)	HMX	35 (≤20)	NA	-
	RDX	34 (≤20)		
	1,3,5-Trinitrobenzene	48 (≤20)		
	1,3-Dinitrobenzene	35 (≤20)		
	TETRYL	50 (≤20)		
	Nitrobenzene	37 (≤20)		
	4-Amino-2,6-dinitrotoluene	34 (≤20)		
	2-Amino-4,6-dinitrotoluene	35 (≤20)		
	2,4,6-Trinitrotoluene	38 (≤20)		
	2,6-Dinitrotoluene	34 (≤20)		
	2,4-Dinitrotoluene	35 (≤20)		
	2-Nitrotoluene	36 (≤20)		
	4-Nitrotoluene	36 (≤20)		
	3-Nitrotoluene	34 (≤20)		
	Pentaerythritol Tetranitrate	29 (≤20)		
FTBL-IS-145-110216RMS/MSD (FTBL-IS-145-110216R)	Nitroglycerin	32 (≤20)	J (all detects)	A

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
KWG61610337-3 (All samples in SDG K1613506)	HMX	69 (74-124)	NA	UJ (all non-detects)	P

Relative percent differences (RPD) were within QC limits.

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
FTBL-IS-145-110216R	Nitroglycerin	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	P
FTBL-IS-139-110216R FTBL-IS-133-110216R	Nitrobenzene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	P

XI. Target Compound Identifications

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and RPD and LCS/LCSD %R, data were qualified as estimated in five samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Explosives - Data Qualification Summary - SDG K1613506

Sample	Compound	Flag	A or P	Reason
FTBL-IS-145-110216R FTBL-IS-139-110216R	HMX RDX 1,3,5-Trinitrobenzene 1,3-Dinitrobenzene TETRYL Nitrobenzene 4-Amino-2,6-dinitrotoluene 2-Amino-4,6-dinitrotoluene 2,4,6-Trinitrotoluene 2,6-Dinitrotoluene 2,4-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene Nitroglycerin Pentaerythritol Tetranitrate	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
FTBL-IS-145-110216R FTBL-IS-139-110216R	Nitroglycerin	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
FTBL-IS-145-110216R FTBL-IS-132-110216R FTBL-IS-139-110216R FTBL-IS-133-110216R FTBL-IS-134-110216R	HMX	UJ (all non-detects)	P	Laboratory control samples (%R)
FTBL-IS-145-110216R	Nitroglycerin	NJ (all detects)	P	Compound quantitation (no confirmation)
FTBL-IS-139-110216R FTBL-IS-133-110216R	Nitrobenzene	NJ (all detects)	P	Compound quantitation (no confirmation)

Fort Bliss, Castner Range
Explosives - Laboratory Blank Data Qualification Summary - SDG K1613506

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Explosives - Field Blank Data Qualification Summary - SDG K1613506

No Sample Data Qualified in this SDG

LDC #: 37664C40
 SDG #: K1613506
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 12/14/16
 Page: 1 of 1
 Reviewer: SV
 2nd Reviewer: SV

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	ICAL ≤ 15% ICV ≤ 20%
III.	Continuing calibration	A	CV ≤ 20%
IV.	Laboratory Blanks	SW	
V.	Field blanks	U	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates/LT	SW/A	LT = 1/8/19
VIII.	Laboratory control samples	SW	LCS / SRM
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SW	
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-145-110216R	K1613506-001	Soil	11/02/16
2	FTBL-IS-132-110216R	K1613506-002	Soil	11/02/16
3	FTBL-IS-139-110216R	K1613506-003	Soil	11/02/16
4	FTBL-IS-133-110216R	K1613506-004	Soil	11/02/16
5	FTBL-IS-134-110216R	K1613506-005	Soil	11/02/16
6	FTBL-IS-145-110216RMS	K1613506-001MS	Soil	11/02/16
7	FTBL-IS-145-110216RMSD	K1613506-001MSD	Soil	11/02/16
8	FTBL-IS-145-110216RDUP	K1613506-001DUP	Soil	11/02/16
9	FTBL-IS-145-110216RTRP	K1613506-001TRP	Soil	11/02/16
10				
11				
12				

Notes:

7	kw G 1610 337-4				
+	↓ -7 (SB)				

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 20\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. Field Blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

LDC #: 37664Cfd

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: JVG
2nd Reviewer: [Signature]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		/		
Were target compounds detected in the field duplicates?			/	
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	X. EPN	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	Y. Azinphos-methyl	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	Z. Coumaphos	EE. Ethyl Benzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	AA. Parathion	SSS. O-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	BB. Trichloronate	RRR. MP-Xylene
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	CC. Trichlorinate	GG. Total Xylene
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotep	DD. Trifluralin	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	EE. Def	8315A
I. Chrysenes	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	FF. Prowl	A. Formaldehyde
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	GG. Ethion	B. Acetaldehyde
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	HH. Famphur	C. Benzaldehyde
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	II. Phosmet	D. Butyraldehyde
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	JJ. Tetrachlorvinphos	
N. Naphthalene	N. 4-Nitrotoluene	N. Dichloroprop	N. Malathion	KK. Demeton (total)	
O. Phenanthrene	O. Nitroglycerin	O.	O. Chlorpyrifos		
P. Pyrene	P. Picric acid	P.	P. Fenthion		
Q.	Q. 2,4-Dinitrophenol	Q.	Q. Parathion-ethyl		
R.	R. 3,5-Dinitroaniline		R. Trichlorate		
S.	S. 2-Nitrophenol		S. Merphos		
	T. 4-Nitrophenol		T. Stirofos		
	U. Picramic acid		U. Tokuthion		
	V. PETN		V. Fensulfothion		
			W. Bolstar		

Notes:

LDC #: 37664 C40

VALIDATION FINDINGS WORKSHEET

BlanksPage: 1 of 1Reviewer: JVG2nd Reviewer: [Signature]METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a given method blank?Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?Y N N/A Was a method blank performed with each extraction batch?Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only

Y N N/A (Gasoline and aromatics only) Was a method blank analyzed with each 24 hour batch?Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤ 20 samples?Blank extraction date: 11/11/16 Blank analysis date: 11/17/16Associated samples: All (N/A)Conc. units: mg/kg

Compound	Blank ID	Sample Identification									
	KWG1610337-7										
M	0.023										

Blank extraction date: _____

Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification									

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".

METHOD: ☒ GC ☒ HPLC

Are surrogates required by the method? Yes / or No .

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were surrogates spiked into all samples and blanks?

Y	N	N/A	Did all surrogate recoveries (%R) meet the QC limits?
---	---	-----	---

[illegible]

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	H	Ortho-Terphenyl	O	Decachlorobiphenyl (DCB)	V	Tri-n-propyltin	CC	2,5-Dibromotoluene
B	4-Bromofluorobenzene (BFB)	I	Fluorobenzene (FBZ)	P	1-methylnaphthalene	W	Tributyl Phosphate	DD	n-Nonatriacontane
C	a,a,a-Trifluorotoluene	J	n-Triacontane	Q	Dichlorophenyl Acetic Acid (DCAA)	X	Triphenyl Phosphate	EE	1,2-Dibromopropane
D	Bromochlorobenene	K	Hexacosane	R	4-Nitrophenol	Y	Tetrachloro-m- xylene	FF	1,2-Dinitrobenzene
E	1,4-Dichlorobutane	L	Bromobenzene	S	1-Chloro-3-Nitrobenzene	Z	2-Bromonaphthalene	GG	2-Nitro-m-xylene
F	1,4-Difluorobenzene (DFB)	M	Benzo(e)Pyrene	T	3,4-Dinitrotoluene	AA	1-Chlorooctadecane	HH	p-Terphenyl
G	Octacosane	N	Terphenyl-D14	U	Triphenyltin	BB	2,4-Dichlorophenylacetic acid	II	

LDC #: 31664C40

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: 

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

 N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y	N	N/A	Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
---	---	-----	--

Y(N) N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

[illegible]

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ARCADIS U.S., Inc.
 Project: Closed Castner Firing Range/06261038.0001.00400
 Sample Matrix: Soil

Service Request: K1613506
 Date Extracted: 11/11/2016
 Date Analyzed: 11/17/2016

Matrix Spike/Duplicate Matrix Spike Summary
 Nitroaromatics and Nitramines (Explosives)

6/7

Sample Name: FTBL-IS-145-110216R
 Lab Code: K1613506-001
 Extraction Method: METHOD
 Analysis Method: 8330B

Units: mg/Kg
 Basis: Dry
 Level: Low
 Extraction Lot: KWG1610337

Analyte Name	Sample Result	FTBL-IS-145-110216RMS KWG1610337-1 Matrix Spike				FTBL-IS-145-110216RDMS KWG1610337-2 Duplicate Matrix Spike				%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	MS %Rec		Result	Spike Amount	MSD %Rec				
HMX	A	ND	0.927	2.02	46 *	1.32	2.03	65 (74-124)	130	35 *	20	J/MS/A
RDX	B	ND	1.04	2.02	51	1.47	2.03	72 (67-124)	6-121	34 *	20	
1,3,5-Trinitrobenzene	C	ND	0.889	2.02	44	1.45	2.03	72 (80-116)	36-137	48 *	20	
1,3-Dinitrobenzene	D	ND	1.10	2.02	54	1.56	2.03	77 (73-119)	14-131	35 *	20	
TETRYL	E	ND	0.762	2.02	38 *	1.27	2.03	63 (68-135)	52-130	50 *	20	
Nitrobenzene	F	ND	1.11	2.02	55	1.61	2.03	79 (67-124)	40-117	37 *	20	
4-Amino-2,6-dinitrotoluene	H	ND	1.03	2.02	51 *	1.45	2.03	72 (64-127)	56-125	34 *	20	
2-Amino-4,6-dinitrotoluene	I	ND	1.08	2.02	53 *	1.54	2.03	76 (71-123)	59-125	35 *	20	
2,4,6-Trinitrotoluene	G	ND	1.04	2.02	51 *	1.52	2.03	75 (71-120)	56-137	38 *	20	
2,6-Dinitrotoluene	K	ND	1.09	2.02	54 *	1.54	2.03	76 (79-117)	63-129	34 *	20	
2,4-Dinitrotoluene	J	ND	1.13	2.02	56 *	1.60	2.03	79 (75-121)	65-133	35 *	20	
2-Nitrotoluene	L	ND	1.07	2.02	53 *	1.54	2.03	76 (70-124)	58-119	36 *	20	
4-Nitrotoluene	N	ND	1.08	2.02	53 *	1.55	2.03	77 (71-124)	61-121	36 *	20	
3-Nitrotoluene	M	ND	1.09	2.02	54 *	1.54	2.03	76 (67-124)	62-117	34 *	20	
Nitroglycerin	O	0.084 Det	1.25	2.02	58	1.72	2.03	81 (73-124)	56-139	32 *	20	
Pentaerythritol Tetranitrate (PETN)	V	ND	1.20	2.02	59 *	1.61	2.03	80 (72-128)	65-127	29 *	20	

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1 of 2

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ARCADIS U.S., Inc.
 Project: Closed Castner Firing Range/06261038.0001.00400
 Sample Matrix: Soil

Service Request: K1613506
 Date Extracted: 11/11/2016
 Date Analyzed: 11/17/2016

Matrix Spike/Duplicate Matrix Spike Summary
 Nitroaromatics and Nitramines (Explosives)

6/7

Sample Name: FTBL-IS-145-110216R
 Lab Code: K1613506-001
 Extraction Method: METHOD
 Analysis Method: 8330B

Units: mg/Kg
 Basis: Dry
 Level: Low
 Extraction Lot: KWG1610337

Analyte Name	Sample Result	FTBL-IS-145-110216RMS KWG1610337-1 Matrix Spike				FTBL-IS-145-110216RDMS KWG1610337-2 Duplicate Matrix Spike				%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec		Result	Spike Amount	%Rec				
HMX	A ND	0.927	2.02	46 *		1.32	2.03	65		61-130	35 *	20
RDX	B ND	1.04	2.02	51		1.47	2.03	72		16-121	34 *	20
1,3,5-Trinitrobenzene	C ND	0.889	2.02	44		1.45	2.03	72		36-137	48 *	20
1,3-Dinitrobenzene	D ND	1.10	2.02	54		1.56	2.03	77		44-131	35 *	20
TETRYL	E ND	0.762	2.02	38 *		1.27	2.03	63		62-130	50 *	20
Nitrobenzene	F ND	1.11	2.02	55		1.61	2.03	79		40-117	37 *	20
4-Amino-2,6-dinitrotoluene	H ND	1.03	2.02	51 *		1.45	2.03	72		66-125	34 *	20
2-Amino-4,6-dinitrotoluene	I ND	1.08	2.02	53 *		1.54	2.03	76		69-125	35 *	20
2,4,6-Trinitrotoluene	G ND	1.04	2.02	51 *		1.52	2.03	75		56-137	38 *	20
2,6-Dinitrotoluene	K ND	1.09	2.02	54 *		1.54	2.03	76		63-129	34 *	20
2,4-Dinitrotoluene	J ND	1.13	2.02	56 *		1.60	2.03	79		65-133	35 *	20
2-Nitrotoluene	L ND	1.07	2.02	53 *		1.54	2.03	76		58-119	36 *	20
4-Nitrotoluene	N ND	1.08	2.02	53 *		1.55	2.03	77		61-121	36 *	20
3-Nitrotoluene	M ND	1.09	2.02	54 *		1.54	2.03	76		62-117	34 *	20
Nitroglycerin	O 0.084 (Det)	1.25	2.02	58		1.72	2.03	81		56-139	32 *	20
Pentaerythritol Tetranitrate	V ND	1.20	2.02	59 *		1.61	2.03	80		65-127	29 *	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

2 of 2

LDC #: 37664 C40

VALIDATION FINDINGS WORKSHEET

Laboratory Control Samples (LCS)

Page: 1 of 1

Reviewer: JVG

2nd Reviewer:

METHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y (N) N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

Level IV/D Only

N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

[illegible]

LDC #: 37664C40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: JVG
2nd Reviewer: _____

METHOD: GC ~~HPLC~~

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y/N N/A	Did the reported results for detected target compounds agree within 10.0% of the recalculated results?
---------	--

Y (N) N/A	Did the percent difference of detected compounds between two columns./detectors $\leq 40\%$?

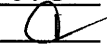
If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

LDC #: 37664C40

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: JVG
2nd Reviewer: 

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = $100 * (S/X)$

Where:

A = Area of compound

C = Concentration of compound

S = Standard deviation of calibration factors

X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported CF (1000 std)	Recalculated CF (1000 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL HPLC LC08	6/8/2016	HMX (Ultra Aromax)	17300	17346	17100	17056	4.7	4.6
			2,4,6-TNT (Ultra Aromax)	46200	46239	42200	42157	6.3	6.2
	ICAL HPLC LC10	7/13/2016	HMX (Synergi Hydro R)	14400	14390	14200	14200	12.1	12.0
			2,4,6-TNT (Synergi Hydro R)	41800	41765	42200	42200	0.7	0.7

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification**METHOD: HPLC Explosives (EPA SW 846 Method 8330B)**

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration percent difference (%D) values were recalculated for the compounds identified below using the following calculation:

$$\text{Percent difference (\%D)} = 100 * (N - C)/N$$

Where:

N = Initial Calibration Factor or Nominal Amount

C = Calibration Factor from Continuing Calibration Standard or Calculated Amount

#	Standard ID	Calibration Date	Compound	CCV Conc	Reported Conc	Recalculated Conc	Reported % D	Recalculated %D
1	15000103 LC08	11/15/2016	HMX (Ultra Aromax)	1000	1043	1040	4	4
			2,4,6-TNT (Ultra Aromax)	1000	996	995	1	1
2	15000113 LC08	11/16/2016	HMX (Ultra Aromax)	1000	1057	1054	5	5
			2,4,6-TNT (Ultra Aromax)	1000	1020	1019	2	2
3	17000113 LC10	11/17/2016	HMX (Synergi Hydro R)	1000	856	855	14	14
			2,4,6-TNT (Synergi Hydro R)	1000	989	989	1	1
4	17000124 LC10	11/17/2016	HMX (Synergi Hydro R)	1000	861	860	14	14
			2,4,6-TNT (Synergi Hydro R)	1000	998	998	0	0

LDC #: 37664 C40

VALIDATION FINDINGS WORKSHEET **Surrogate Results Verification**

Page: 1 of 1Reviewer: JVG2nd reviewer: [Signature]METHOD: GC HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate SpikedSample ID: 1

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
S	LC10	5000	2876	58	58	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	H	Ortho-Terphenyl	O	Decachlorobiphenyl (DCB)	V	Tri-n-propyltin	CC	2,5-Dibromotoluene
B	4-Bromofluorobenzene (BFB)	I	Fluorobenzene (FBZ)	P	1-methylnaphthalene	W	Tributyl Phosphate	DD	n-Nonatriacontane
C	a,a,a-Trifluorotoluene	J	n-Triacontane	Q	Dichlorophenyl Acetic Acid (DCAA)	X	Triphenyl Phosphate	EE	1,2-Dibromopropane
D	Bromochlorobenene	K	Hexacosane	R	4-Nitrophenol	Y	Tetrachloro-m- xylene	FF	1,2-Dinitrobenzene
E	1,4-Dichlorobutane	L	Bromobenzene	S	1-Chloro-3-Nitrobenzene	Z	2-Bromonaphthalene	GG	2-Nitro-m-xylene
F	1,4-Difluorobenzene (DFB)	M	Benzo(e)Pyrene	T	3,4-Dinitrotoluene	AA	1-Chlorooctadecane	HH	p-Terphenyl
G	Octacosane	N	Terphenyl-D14	U	Triphenyltin	BB	2,4-DCPA	II	

LDC #: 37664040

VALIDATION FINDINGS WORKSHEET **Matrix Spike/Matrix Spike Duplicates Results Verification**

Page: 1 of 1Reviewer: JVG2nd Reviewer: CLMETHOD: GC HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where

SSC = Spiked sample concentration

MS = Matrix spike

SC = Sample concentration

MSD = Matrix spike duplicate

SA = Spike added

$$\text{RPD} = ((\text{SSCMS} - \text{SSCMSD}) * 2) / (\text{SSCMS} + \text{SSCMSD}) * 100$$

MS/MSD samples: 6/7

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		Matrix spike		Matrix Spike Duplicate		MS/MSD		
	MS	MSD		---	MS	MSD	Percent Recovery		Percent Recovery		RPD	
							Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)												
Diesel (8015)												
Benzene (8021B)												
Methane (RSK-175)												
2,4-D (8151)												
Dinoseb (8151)												
Naphthalene (8310)												
Anthracene (8310)												
HMX (8330)	2.02	2.03	0	0.927	1.32	46	46	65	65	35	35	
2,4,6-Trinitrotoluene (8330)	1	1	1	1.04	1.94	51	51	75	75	36	38	
Phorate (8141A)												
Malathion (8141A)												
Formaldehyde (8315A)												

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 37664040

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1Laboratory Control Sample/Laboratory Control Sample Duplicates Results VerificationReviewer: JVG
2nd Reviewer: [Signature]METHOD: GC / HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = $100 * (SSC/SA)$ RPD = $((SSCLCS - SSCLCSD) * 2) / (SSCLCS + SSCLCSD) * 100$ Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample

SA = Spike added

LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: KWG161637-3

Compound	Spike Added (mg/kg)		Spike Sample Concentration (mg/kg)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)	2.00	MA	1.37	MA	69	69				
2,4,6-Trinitrotoluene (8330)	↓	↓	1.42	↓	81	81				
Phorate (8141A)										
Malathion (8141A)										
Formaldehyde (8315A)										

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 37664 C40**VALIDATION FINDINGS WORKSHEET**
Sample Calculation VerificationPage: 1 of 1
Reviewer: JVG
2nd Reviewer: [Signature]METHOD: GC / HPLC(Y) N N/A
(Y) N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds within 10% of the reported results?

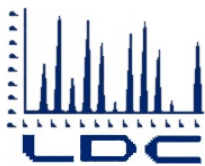
Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

Example:

Sample ID. 3 Compound Name Nitrobenzene LC10Concentration = $\frac{(602759)(8 \text{ ml})}{(37200)(10.065 \text{ g})(0.983)(1000)} = 0.013 \text{ mg/kg}$ A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound
In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

#	Sample ID	Compound	Reported Concentrations (<u>mg/kg</u>)	Recalculated Results Concentrations (<u> </u>)	Qualifications
			0.013		

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: Mr. Garrett Ferguson

January 5, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear Mr. Ferguson,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 16, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37720:

<u>SDG #</u>	<u>Fraction:</u>
K1613626	Metals, Explosives
K1613722	
K1613970	

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist

L:\Arcadis\Fort Bliss-Castner Range\37720ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

SDG: K1613626, K1613722, K1613970

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

January 4, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and IV data validation results for samples collected during the July through November 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the EPA CLPNFG for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Synthetic Precipitation Leaching Procedure (SPLP) for Arsenic, Beryllium, and Lead by EPA SW 846 Method 6010C
Toxicity Characteristic Leaching Procedure (TCLP) for Lead by EPA SW 846 Method 6010C

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), laboratory blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), laboratory triplicate samples (TRP), and standard reference materials (SRM), and field triplicates.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, calibration blanks, interference check samples, and serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the method. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of two blanks for lead. The associated sample concentrations were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank and no data were qualified.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1613722/ 6010C	ICB/CCB	Lead	2 ug/L	FTBL-SS-B42-0-6-071516
K1613722/ 6010C	ICB/CCB	Lead	3 ug/L	FTBL-SS-B04-0-6-072116

Sample concentrations were compared to concentrations detected in the calibration blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks so no data were qualified.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. ICP Interference Check Sample (ICS) Analysis (Metals only)

The frequency of analysis was met.

The criteria for analysis were met.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives in one MS/MSD pair and metals in one MS/MSD pair. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. No data were qualified for metals MS/MSD %R outside QC limits when the post-digestion spike %R were within QC limits. The details are provided in Enclosures I and II.

IX. Triplicate Sample Analysis

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

XI. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of several explosives. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XII. Field Triplicates

Three sets of field triplicates were collected and analyzed for explosives. All relative standard deviations (RSDs) were within QC limits with the exception of 3-nitrotoluene in one set of triplicates. No samples were qualified since one or more results were less than 5x the limit of quantitation (LOQ). The field triplicates are identified in Attachment 1

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613626/ 8330B	FTBL-IS-077-110416A-R FTBL-IS-077-110416B-R FTBL-IS-033-110416R FTBL-IS-032-110416R FTBL-IS-071-110416R FTBL-IS-046-110416R	3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613626/ 8330B	FTBL-IS-075-110416R FTBL-IS-038-110416R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613626/ 8330B	FTBL-IS-055-110416R	2,6-Dinitrotoluene 3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613970/ 8330B	FTBL-IS-094-111416R	4-Amino-2,6-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in these SDGs.

Due to MS/MSD %R and RPD exceedances, data were qualified as estimated in three samples.

Due to SRM %R exceedances, data were qualified as estimated in twenty-seven samples.

Due to results below the LOQ, data were qualified as estimated in eleven samples.

Due to results not being confirmed, data were qualified as presumptive in ten samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
12-Jul-2016	FTBL-IS-109-071216	K1613722-004	N	EPA 3010A	6010C	III
12-Jul-2016	FTBL-IS-109-071216MS	KQ1615375-03MS	MS	EPA 3010A	6010C	III
12-Jul-2016	FTBL-IS-109-071216MSD	KQ1615375-04SD	MSD	EPA 3010A	6010C	III
12-Jul-2016	FTBL-IS-095-071216	K1613722-001	N	EPA 3010A	6010C	IV
12-Jul-2016	FTBL-IS-095-071216MS	KQ1614805-03MS	MS	EPA 3010A	6010C	IV
12-Jul-2016	FTBL-IS-095-071216MSD	KQ1614805-04SD	MSD	EPA 3010A	6010C	IV
15-Jul-2016	FTBL-SS-B42-0-6-071516	K1613722-002	N	EPA 3010A	6010C	III
21-Jul-2016	FTBL-SS-B04-0-6-072116	K1613722-003	N	EPA 3010A	6010C	III
21-Jul-2016	FTBL-SS-B04-0-6-072116MS	KQ1614995-05MS	MS	EPA 3010A	6010C	III
21-Jul-2016	FTBL-SS-B04-0-6-072116MSD	KQ1614995-06SD	MSD	EPA 3010A	6010C	III
21-Jul-2016	FTBL-SS-B06-0-6-072116	K1613722-005	N	EPA 3010A	6010C	III
21-Jul-2016	FTBL-SS-B06-0-6-072116MS	KQ1615415-03MS	MS	EPA 3010A	6010C	III
21-Jul-2016	FTBL-SS-B06-0-6-072116MSD	KQ1615415-04SD	MSD	EPA 3010A	6010C	III
04-Nov-2016	FTBL-IS-077-110416A-R	K1613626-001	FT	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-077-110416A-RREP1	KWG1610395-1	REP	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-077-110416A-RREP3	KWG1610395-2	REP	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-077-110416A-RMS	KWG1610395-3	MS	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-077-110416A-RMSD	KWG1610395-4	MSD	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-075-110416R	K1613626-007	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-077-110416B-R	K1613626-002	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-071-110416R	K1613626-008	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-055-110416R	K1613626-009	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-077-110416C-R	K1613626-003	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-038-110416R	K1613626-011	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-076-110416R	K1613626-004	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-046-110416R	K1613626-010	N	EPA 3535A	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
04-Nov-2016	FTBL-IS-033-110416R	K1613626-005	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-032-110416R	K1613626-006	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-036-110416R	K1613626-014	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-037-110416R	K1613626-012	N	EPA 3535A	8330B	III
04-Nov-2016	FTBL-IS-045-110416R	K1613626-013	N		9045D	NV
04-Nov-2016	FTBL-IS-045-110416R	K1613626-013	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-109-111416R	K1613970-009	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-093-111416A-R	K1613970-001	FT	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-093-111416A-RREP1	KWG1610700-1	REP	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-093-111416A-RREP3	KWG1610700-2	REP	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-093-111416A-RMS	KWG1610700-3	MS	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-093-111416A-RMSD	KWG1610700-4	MSD	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-093-111416B-R	K1613970-002	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-096-111416R	K1613970-010	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-093-111416C-R	K1613970-003	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-095-111416R	K1613970-011	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-091-111416R	K1613970-004	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-094-111416R	K1613970-012	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-090-111416R	K1613970-005	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-114-111416A-R	K1613970-006	FT	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-113-111416R	K1613970-013	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-114-111416B-R	K1613970-007	N	EPA 3535A	8330B	III
14-Nov-2016	FTBL-IS-114-111416C-R	K1613970-008	N	EPA 3535A	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A, K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613626

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-032-110416R Collected: 11/4/2016 2:00:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-032-110416R Collected: 11/4/2016 2:00:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.032	JN	0.040	LOD	0.078	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-033-110416R Collected: 11/4/2016 1:10:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-033-110416R Collected: 11/4/2016 1:10:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.027	JN	0.040	LOD	0.079	LOQ	mg/Kg	NJ	RI, ProfJudg

Sample ID: FTBL-IS-036-110416R Collected: 11/4/2016 2:00:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-037-110416R Collected: 11/4/2016 2:30:00 PM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-038-110416R Collected: 11/4/2016 12:00:00 PM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.011	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 1 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A,
K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613626

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/4/2016 3:00:00									
Sample ID: FTBL-IS-045-110416R		Collected: PM			Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

11/4/2016 12:50:00									
Sample ID: FTBL-IS-046-110416R		Collected: PM			Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/4/2016 12:50:00									
Sample ID: FTBL-IS-046-110416R		Collected: PM			Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.019	JN	0.040	LOD	0.080	LOQ	mg/Kg	NJ	RI, ProfJudg

11/4/2016 10:20:00									
Sample ID: FTBL-IS-055-110416R		Collected: AM			Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.025	JN	0.040	LOD	0.080	LOQ	mg/Kg	NJ	RI, ProfJudg

11/4/2016 10:20:00									
Sample ID: FTBL-IS-055-110416R		Collected: AM			Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,6-DINITROTOLUENE	0.012	JN	0.020	LOD	0.040	LOQ	mg/Kg	NJ	RI, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/4/2016 9:30:00									
Sample ID: FTBL-IS-071-110416R		Collected: AM			Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/4/2016 9:30:00									
Sample ID: FTBL-IS-071-110416R		Collected: AM			Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.023	JN	0.040	LOD	0.080	LOQ	mg/Kg	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 2 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A,
K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613626

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/4/2016 8:45:00									
Sample ID: FTBL-IS-075-110416R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.012	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

11/4/2016 12:30:00									
Sample ID: FTBL-IS-076-110416R			Collected: PM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/4/2016 8:00:00									
Sample ID: FTBL-IS-077-110416A-R			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Ms
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Ms
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Ms
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Ms, Lcs

11/4/2016 8:00:00									
Sample ID: FTBL-IS-077-110416A-R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.028	JN	0.040	LOD	0.080	LOQ	mg/Kg	NJ	RI, ProfJudg

11/4/2016 9:30:00									
Sample ID: FTBL-IS-077-110416B-R			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.022	JN	0.040	LOD	0.080	LOQ	mg/Kg	NJ	RI, ProfJudg

11/4/2016 9:30:00									
Sample ID: FTBL-IS-077-110416B-R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 3 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A, K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613626

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-077-110416C-R

Collected: AM

11/4/2016 11:30:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

SDG: K1613722

Method Category: METALS

Method: 6010C

Matrix: Soil

Sample ID: FTBL-IS-095-071216

Collected: PM

7/12/2016 12:40:00

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.002	J	0.0005	LOD	0.010	LOQ	mg/L	J	RI, Ms
ARSENIC	0.019	=	0.010	LOD	0.010	LOQ	mg/L	J	Ms

SDG: K1613970

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-090-111416R

Collected: AM

11/14/2016 11:00:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 4 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A, K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613970

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-091-111416R

Collected: AM

11/14/2016 10:10:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-093-111416A-R

Collected: AM

11/14/2016 8:00:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Ms, Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 5 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A, K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613970

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-093-111416B-R

Collected: AM 11/14/2016 8:45:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-093-111416C-R

Collected: AM 11/14/2016 9:30:00

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 6 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A,
K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613970

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-094-111416R

Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.0084	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJdg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-095-111416R

Collected: AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 7 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A, K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613970

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-096-111416R Collected: 11/14/2016 8:50:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-109-111416R Collected: 11/14/2016 7:50:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 8 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A, K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613970

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-113-111416R 11/14/2016 12:00:00 Collected: PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-114-111416A-R 11/14/2016 12:00:00 Collected: PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 9 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A, K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1613970

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-114-111416B-R Collected: 11/14/2016 12:40:00 PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-114-111416C-R Collected: 11/14/2016 1:20:00 PM Analysis Type: Initial2 Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 10 of 11

Data Qualifier Summary

Lab Reporting Batch ID: K1613626, K1613722, K1613970

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A, K1613722_SEDD2A,
K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Lcs	Laboratory Control Spike Lower Estimation
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:40:44 PM

ADR version 1.9.0.325

Page 11 of 11

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1613626

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613626

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-077-110416A-RMSD (FTBL-IS-077-110416A-R)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	- - - - - - - - - - -	- - - - - - - - - - -	73.00-119.00 71.00-120.00 75.00-121.00 71.00-123.00 70.00-124.00 64.00-127.00 71.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00	28 (20.00) 29 (20.00) 27 (20.00) 28 (20.00) 23 (20.00) 28 (20.00) 23 (20.00) 23 (20.00) 26 (20.00) 35 (20.00) 26 (20.00)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	J (all detects)
FTBL-IS-077-110416A-RMS FTBL-IS-077-110416A-RMSD (FTBL-IS-077-110416A-R)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE HMX Tetryl	71 74 72 65	- - - -	80.00-116.00 79.00-117.00 74.00-124.00 68.00-135.00	31 (20.00) 29 (20.00) 30 (20.00) 35 (20.00)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE HMX Tetryl	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:07:44 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613626

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610395-6 (FTBL-IS-032-110416R FTBL-IS-033-110416R FTBL-IS-036-110416R FTBL-IS-037-110416R FTBL-IS-038-110416R FTBL-IS-045-110416R FTBL-IS-046-110416R FTBL-IS-055-110416R FTBL-IS-071-110416R FTBL-IS-075-110416R FTBL-IS-076-110416R FTBL-IS-077-110416A-R FTBL-IS-077-110416B-R FTBL-IS-077-110416C-R)	Tetryl	65	-	68.00-135.00	-	Tetryl	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:07:47 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613626

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-032-110416R	3-NITROTOLUENE	JN	0.032	0.078	LOQ	mg/Kg	J (all detects)
FTBL-IS-033-110416R	3-NITROTOLUENE	JN	0.027	0.079	LOQ	mg/Kg	J (all detects)
FTBL-IS-038-110416R	NITROBENZENE	JN	0.011	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-046-110416R	3-NITROTOLUENE	JN	0.019	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-055-110416R	2,6-DINITROTOLUENE	JN	0.012	0.040	LOQ	mg/Kg	J (all detects)
	3-NITROTOLUENE	JN	0.025	0.080	LOQ	mg/Kg	
FTBL-IS-071-110416R	3-NITROTOLUENE	JN	0.023	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-075-110416R	NITROBENZENE	JN	0.012	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-077-110416A-R	3-NITROTOLUENE	JN	0.028	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-077-110416B-R	3-NITROTOLUENE	JN	0.022	0.080	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:07:49 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1613626

Laboratory: ALS_K

EDD Filename: K1613626_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-077-110416A-R	FTBL- IS-077-110416B-R	FTBL- IS-077-110416C-R			
3-NITROTOLUENE	0.028	0.022	0.040 U	24	20.00*	No Qualifiers Applied

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:07:51 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37720A40
SDG #: K1613626
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/21/16
Page: 1 of 2
Reviewer: 9
2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	NW	TP = (1 + 2 + 3) (K5XPL)
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-077-110416A-R	K1613626-001	Soil	11/04/16
2	FTBL-IS-077-110416B-R	K1613626-002	Soil	11/04/16
3	FTBL-IS-077-110416C-R	K1613626-003	Soil	11/04/16
4	FTBL-IS-076-110416R	K1613626-004	Soil	11/04/16
5	FTBL-IS-033-110416R	K1613626-005	Soil	11/04/16
6	FTBL-IS-032-110416R	K1613626-006	Soil	11/04/16
7	FTBL-IS-075-110416R	K1613626-007	Soil	11/04/16
8	FTBL-IS-071-110416R	K1613626-008	Soil	11/04/16
9	FTBL-IS-055-110416R	K1613626-009	Soil	11/04/16
10	FTBL-IS-046-110416R	K1613626-010	Soil	11/04/16
11	FTBL-IS-038-110416R	K1613626-011	Soil	11/04/16
12	FTBL-IS-037-110416R	K1613626-012	Soil	11/04/16
13	FTBL-IS-045-110416R	K1613626-013	Soil	11/04/16
14	FTBL-IS-036-110416R	K1613626-014	Soil	11/04/16
15	FTBL-IS-077-110416A-RMS	K1613626-001MS	Soil	11/04/16
16	FTBL-IS-077-110416A-RMSD	K1613626-001MSD	Soil	11/04/16

LDC #: 37720A40
SDG #: K1613626
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 11/1/16
Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
17	FTBL-IS-077-110416A-RDUP	K1613626-001DUP	Soil	11/04/16
18	FTBL-IS-077-110416A-RTRP	K1613626-001TRP	Soil	11/04/16
19				
20				
21				
22				
23				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Quality Control Outlier Reports

K1613722

Method Blank Outlier Report

Lab Reporting Batch ID: K1613722

Laboratory: ALS_K

EDD Filename: K1613722_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6010C
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1614805-02	11/14/2016 3:27:00 PM	LEAD	0.003 mg/L	FTBL-IS-095-071216 FTBL-SS-B42-0-6-071516
KQ1614995-04	11/16/2016 12:50:00 PM	LEAD	0.022 mg/L	FTBL-SS-B04-0-6-072116

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:08:06 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613722

Laboratory: ALS_K

EDD Filename: K1613722_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6010C

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL -IS-095-071216MS (Dry)	ARSENIC	70*	-	82.00-111.00	24 (20.00)	ARSENIC	J (all detects)
FTBL -IS-095-071216MSD (Dry)	BERYLLIUM	70*	-	83.00-113.00	22 (20.00)	BERYLLIUM	UJ (all non-detects)
(FTBL -IS-095-071216)	LEAD	69	-	81.00-112.00	24 (20.00)	LEAD	As, Be, PS in, Qual RPD only

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:19:16 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613722

Laboratory: ALS_K

EDD Filename: K1613722_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6010C

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-IS-095-071216	BERYLLIUM	J	0.002	0.010	LOQ	mg/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:08:09 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37720B4b
 SDG #: K1613722
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR# 30

Date: 12/28/16
 Page: 1 of 1
 Reviewer: SD
 2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Instrument Calibration	A	
III.	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	SW	ICB/CCB only
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. MSB: (8.9) = As, Be = Postspike
VII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
VIII.	Serial Dilution	A	SER = (1.7)(4) (5)
IX.	Laboratory control samples	N	Not reviewed for ADR validation.
X.	Field Duplicates	N	Not reviewed for ADR validation.
XI.	Sample Result Verification	N	Not reviewed for ADR validation.
XII.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-095-071216** As, Be	K1613722-001**	Soil	07/12/16
2	FTBL-SS-B42-0-6-071516 Pb	K1613722-002	Soil	07/15/16
3	FTBL-SS-B04-0-6-072116 Pb	K1613722-003	Soil	07/21/16
4	FTBL-IS-109-071216 As	K1613722-004	Soil	07/12/16
5	FTBL-SS-B06-0-6-072116 Pb	K1613722-005	Soil	07/21/16
6	FTBL-IS-095-071216MS As, Be, Pb	K1613722-001MS	Soil	07/12/16
7	FTBL-IS-095-071216MSD ↓	K1613722-001MSD	Soil	07/12/16
8	FTBL-SS-B04-0-6-072116MS Pb	K1613722-003MS	Soil	07/21/16
9	FTBL-SS-B04-0-6-072116MSD ↓	K1613722-003MSD	Soil	07/21/16
10	FTBL-IS-109-071216MS As	K1613722-004MS	Soil	07/12/16
11	FTBL-IS-109-071216MSD ↓	K1613722-004MSD	Soil	07/12/16
12	FTBL-SS-B06-0-6-072116MS Pb	K1613722-005MS	Soil	07/21/16
13	FTBL-SS-B06-0-6-072116MSD ↓	K1613722-005MSD	Soil	07/21/16
14				
15				
16				

Notes:

LDC #: 372084b

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: 30

2nd reviewer:_____

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JD

METHOD: Metals (EPA SW 864 Method 6010/6020/7000)

Soil preparation factor applied: _____

2nd Reviewer: _____

Sample Concentration units, unless otherwise noted: mg/L

Associated Samples: 2

					Sample Identification								
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.								
Pb			2	0.01									

Sample Concentration units, unless otherwise noted: mg/L

Associated Samples: 3

					Sample Identification								
Analyte	Maximum PB ^a (mg/Kg)	Maximum PB ^a (ug/L)	Maximum ICB/CCB ^a (ug/L)	Blank Action Limit	No Qual.								
Pb			3	0.015									

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control Outlier Reports

K1613970

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613970

Laboratory: ALS_K

EDD Filename: K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-093-111416A-RMSD (FTBL-IS-093-111416A-R)	RDX	-	65	67.00-129.00	-	RDX	J (all detects) UJ (all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:08:20 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613970

Laboratory: ALS_K

EDD Filename: K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610700-6	1,3,5-TRINITROBENZENE	65	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J (all detects) UJ (all non-detects)
(FTBL-IS-090-111416R	1,3-DINITROBENZENE	69	-	73.00-119.00	-	1,3-DINITROBENZENE	
FTBL-IS-091-111416R	2,4,6-TRINITROTOLUENE	62	-	71.00-120.00	-	2,4,6-TRINITROTOLUENE	
FTBL-IS-093-111416A-R	2,4-DINITROTOLUENE	69	-	75.00-121.00	-	2,4-DINITROTOLUENE	
FTBL-IS-093-111416B-R	2,6-DINITROTOLUENE	72	-	79.00-117.00	-	2,6-DINITROTOLUENE	
FTBL-IS-093-111416C-R	2-AMINO-4,6-DINITROTOLUENE	65	-	71.00-123.00	-	2-AMINO-4,6-DINITROTOLUENE	
FTBL-IS-094-111416R	4-Amino-2,6-Dinitrotoluene	57	-	64.00-127.00	-	4-Amino-2,6-Dinitrotoluene	
FTBL-IS-095-111416R	HMX	70	-	74.00-124.00	-	HMX	
FTBL-IS-096-111416R	NITROGLYCERIN	24	-	73.00-124.00	-	NITROGLYCERIN	
FTBL-IS-109-111416R	Pentaerythritol Tetranitrate (PETN)	46	-	72.00-128.00	-	Pentaerythritol Tetranitrate (PETN)	
FTBL-IS-113-111416R	RDX	60	-	67.00-129.00	-	RDX	
FTBL-IS-114-111416A-R	Tetryl	44	-	68.00-135.00	-	Tetryl	
FTBL-IS-114-111416B-R							
FTBL-IS-114-111416C-R)							

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:08:21 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613970

Laboratory: ALS_K

EDD Filename: K1613970_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-094-111416R	4-Amino-2,6-Dinitrotoluene	JN	0.0084	0.081	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

12/28/2016 2:08:23 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37720C40
SDG #: K1613970
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 12/21/16
Page: 1 of 2
Reviewer: [Signature]
2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	LCS/SRM.
IX.	Field duplicates	N/D	TP = 1+2+3, 6+7+8
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-093-111416A-R	K1613970-001	Soil	11/14/16
2	FTBL-IS-093-111416B-R	K1613970-002	Soil	11/14/16
3	FTBL-IS-093-111416C-R	K1613970-003	Soil	11/14/16
4	FTBL-IS-091-111416R	K1613970-004	Soil	11/14/16
5	FTBL-IS-090-111416R	K1613970-005	Soil	11/14/16
6	FTBL-IS-114-111416A-R	K1613970-006	Soil	11/14/16
7	FTBL-IS-114-111416B-R	K1613970-007	Soil	11/14/16
8	FTBL-IS-114-111416C-R	K1613970-008	Soil	11/14/16
9	FTBL-IS-109-111416R	K1613970-009	Soil	11/14/16
10	FTBL-IS-096-111416R	K1613970-010	Soil	11/14/16
11	FTBL-IS-095-111416R	K1613970-011	Soil	11/14/16
12	FTBL-IS-094-111416R	K1613970-012	Soil	11/14/16
13	FTBL-IS-113-111416R	K1613970-013	Soil	11/14/16
14	FTBL-IS-093-111416A-RMS	K1613970-001MS	Soil	11/14/16
15	FTBL-IS-093-111416A-RMSD	K1613970-001MSD	Soil	11/14/16
16	FTBL-IS-093-111416A-RDUP	K1613970-001DUP	Soil	11/14/16

LDC #: 37720C40
SDG #: K1613970
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET
ADR

Date: 12/1/16
Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
17	FTBL-IS-093-111416A-RTRP	K1613970-001TRP	Soil	11/14/16
18				
19				
20				
21				
22				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 372040

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: 

2nd Reviewer:

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

~~Y N N/A~~

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A
---	---	-----

Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: January 4, 2017

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1613722

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-095-071216	K1613722-001	Soil	07/12/16
FTBL-IS-095-071216MS	K1613722-001MS	Soil	07/12/16
FTBL-IS-095-071216MSD	K1613722-001MSD	Soil	07/12/16

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Arsenic, Beryllium, and Lead by Environmental Protection Agency (EPA) SW 846 Method 6010C

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

III. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
FTBL-IS-095-071216MS/MSD (FTBL-IS-095-071216)	Arsenic Beryllium	24 (≤20) 22 (≤20)	J (all detects) J (all detects)	A

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to MS/MSD RPD, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1613722

Sample	Analyte	Flag	A or P	Reason
FTBL-IS-095-071216	Arsenic Beryllium	J (all detects) J (all detects)	A	Matrix Spike/Matrix Spike Duplicates (RPD)

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1613722

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1613722

No Sample Data Qualified in this SDG

LDC #: 37720B4b

VALIDATION COMPLETENESS WORKSHEET

Date: 12/28/16

SDG #: K1613722

ADR/IV

Page: 1 of 1

Laboratory: ALS Environmental

35

Reviewer: 35

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/12/16
II.	Instrument Calibration	A	
III.	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	A	
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	SW	MSD = (6.7)
VII.	Duplicate sample analysis	N	
VIII.	Serial Dilution	A	SER = (1)
IX.	Laboratory control samples	A	LC5
X.	Field Duplicates	N	
XI.	Sample Result Verification	A	
XII.	Overall Assessment of Data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-095-071216**	K1613722-001**	Soil	07/12/16
2	FTBL-SS-B42-0-6-071516	K1613722-002	Soil	07/15/16
3	FTBL-SS-B04-0-6-072116	K1613722-003	Soil	07/21/16
4	FTBL-IS-109-071216	K1613722-004	Soil	07/12/16
5	FTBL-SS-B06-0-6-072116	K1613722-005	Soil	07/21/16
6	FTBL-IS-095-071216MS	K1613722-001MS	Soil	07/12/16
7	FTBL-IS-095-071216MSD	K1613722-001MSD	Soil	07/12/16
8	FTBL-SS-B04-0-6-072116MS	K1613722-003MS	Soil	07/21/16
9	FTBL-SS-B04-0-6-072116MSD	K1613722-003MSD	Soil	07/21/16
10	FTBL-IS-109-071216MS	K1613722-004MS	Soil	07/12/16
11	FTBL-IS-109-071216MSD	K1613722-004MSD	Soil	07/12/16
12	FTBL-SS-B06-0-6-072116MS	K1613722-005MS	Soil	07/21/16
13	FTBL-SS-B06-0-6-072116MSD	K1613722-005MSD	Soil	07/21/16
14				
15				
16				

Notes:

Method:Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
III. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients > 0.995 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm RL$ ($\pm 2X RL$ for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?			/	
If the %Rs were outside the criteria, was a reanalysis performed?			/	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	/			
Were all percent differences (%Ds) < 10%?	/			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		/		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
XIII. Field blanks				
Field blanks were identified in this SDG.		/		
Target analytes were detected in the field blanks.			/	

LDC #: 3720B4b

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: JD

2nd reviewer: _____

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 3720BAH

VALIDATION FINDINGS WORKSHEET **Initial and Continuing Calibration Calculation Verification**

Page: 1 of 1
 Reviewer: SS
 2nd Reviewer: _____

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
 True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
ICV 13:51	ICP (Initial calibration)	As	247 ug/L	2500 ug/L	99%R	99%R	Y
	ICP/MS (Initial calibration)						
	CVAA (Initial calibration)						
CCV 15:57	ICP (Continuing calibration)	Be	247 ug/L	250 ug/L	99%R	99%R	Y
	ICP/MS (Continuing calibration)						
	CVAA (Continuing calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibration)						

Comments: _____

LDC #: 3720846

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

Page: 1 of 1

Reviewer: JD

2nd reviewer: _____

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y) N N/A Have results been reported and calculated correctly?

Y	N	N/A	Are results within the calibrated range of the instruments and within the linear range of the ICP?
---	---	-----	--

Y	N	N/A	Are all detection limits below the CRDL?
---	---	-----	--

Detected analyte results for (1) Be were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(\text{RD})(\text{FV})(\text{Dil})}{(\text{In. Vol.})}$$

Recalculation:

RD	=	Raw data concentration
FV	=	Final volume (ml)
In. Vol.	=	Initial volume (ml) or weight (G)
Dil	=	Dilution factor

$$20 \approx 0.002 \text{ mg/L}$$
[illegible]

Note: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

January 11, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fraction listed below. This SDG was received on December 30, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37819:

<u>SDG #</u>	<u>Fraction:</u>
K1613773	Explosives

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

L:\Arcadis\Fort Bliss-Castner Range\37819ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

SDG: K1613773

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

January 11, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the November 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, laboratory blanks, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory triplicate samples (TRP), laboratory control sample (LCS), standard reference materials (SRM), and field triplicates.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met with the exception of fifteen samples for explosives. Due to grossly exceeding holding times (e.g., >2x recommended holding time), 240 explosive results were qualified as rejected (R). The details regarding the qualification of data are provided in Enclosure I.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of one storage blank for 3-nitrotoluene, one method blank for 3-nitrotoluene, one storage blank for 2,6-dinitrotoluene and 3-nitrotoluene, and one method blank for 1,3,5-trinitrotoluene and 3-nitrotoluene. The associated sample results were not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the blanks, therefore no data were qualified. The details are presented in Enclosure I.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives in one MS/MSD pairs. No data were qualified due to high %Rs since the associated results were non-detected. The details are provided in Enclosures I

IX. Triplicate Sample Analysis

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits with the exception of one TRP for nitrobenzene. No data were qualified since one or more results were less than 5x the reporting limit (RL). The details are provided in Enclosure I.

XI. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the exception of one LCS for several explosives. No data were qualified due to high %Rs since the associated results were non-detected. The details regarding the qualification of data are provided in Enclosure I.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of two SRM samples for several explosives. The tetryl result in all initial samples in SDG K1613773 was qualified as rejected (R) due to SRM %Rs grossly outside QC limits (i.e., $\leq 10\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XII. Field Triplicates

Two sets of field triplicates were collected and analyzed for explosives. All RPDs were within QC limits with the exception of nitroglycerin in one triplicate set. No samples were qualified since one or more results were less than 5x the limit of quantitation (LOQ). The field triplicate result comparisons are provided in Enclosure I.

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613773/ 8330B	FTBL-IS-003-110816R	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed unusable as follows:

SDG/ Method	Sample	Compound	Flag	A or P
K1613773/ 8330B	FTBL-IS-003-110816A-RRE FTBL-IS-003-110816B-RRE FTBL-IS-003-110816C-RRE FTBL-IS-005-110816RRE FTBL-IS-030-110816A-RRE FTBL-IS-030-110816B-RRE FTBL-IS-030-110816C-RRE FTBL-IS-031-110816RRE FTBL-IS-001-110816RRE FTBL-IS-002-110816RRE FTBL-IS-054-110816RRE FTBL-IS-007-110816RRE FTBL-IS-028-110816RRE FTBL-IS-004-110816RRE FTBL-IS-029-110816RRE	All TCL compounds	R	A

Due to SRM %R exceedances, data were qualified as rejected in fifteen samples.

Due to SRM %R, data were qualified as estimated in fifteen samples.

Due to results below the LOQ, data were qualified as estimated in one sample.

Due to results not being confirmed, data were qualified as presumptive in one sample.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-Nov-2016	FTBL-IS-003-110816A-R	K1613773-001	FT	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RRE	K1613773-001RE	FT	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RREP1	KWG1610461-1	REP	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RREP4	KWG1610461-2	REP	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RMS	KWG1610461-3	MS	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RMSD	KWG1610461-4	MSD	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RREP3	KWG1611226-1	REP	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RREP6	KWG1611226-2	REP	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RMS	KWG1611226-3	MS	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816A-RMSD	KWG1611226-4	MSD	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-002-110816R	K1613773-010	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-002-110816RRE	K1613773-010RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816B-R	K1613773-002	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816B-RRE	K1613773-002RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-001-110816R	K1613773-009	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-001-110816RRE	K1613773-009RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-004-110816R	K1613773-014	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-004-110816RRE	K1613773-014RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816C-R	K1613773-003	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-003-110816C-RRE	K1613773-003RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-007-110816R	K1613773-012	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-007-110816RRE	K1613773-012RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-005-110816R	K1613773-004	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-005-110816RRE	K1613773-004RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-030-110816A-R	K1613773-005	FT	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-030-110816A-RRE	K1613773-005RE	FT	EPA 3535A	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
08-Nov-2016	FTBL-IS-028-110816R	K1613773-013	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-028-110816RRE	K1613773-013RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-030-110816B-R	K1613773-006	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-030-110816B-RRE	K1613773-006RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-029-110816R	K1613773-015	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-029-110816RRE	K1613773-015RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-030-110816C-R	K1613773-007	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-030-110816C-RRE	K1613773-007RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-031-110816R	K1613773-008	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-031-110816RRE	K1613773-008RE	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-054-110816R	K1613773-011	N	EPA 3535A	8330B	III
08-Nov-2016	FTBL-IS-054-110816RRE	K1613773-011RE	N	EPA 3535A	8330B	III

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/8/2016 9:15:00									
Sample ID: FTBL-IS-001-110816R		Collected: AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/8/2016 9:15:00									
Sample ID: FTBL-IS-001-110816R		Collected: AM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U,i	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/8/2016 9:15:00									
Sample ID: FTBL-IS-001-110816RRE		Collected: AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 1 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-001-110816RRE

Collected: 11/8/2016 9:15:00 AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE

Sample ID: FTBL-IS-002-110816R

Collected: 11/8/2016 8:35:00 AM

Analysis Type: Initial

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.074	U,i	0.074	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-002-110816RRE

Collected: 11/8/2016 8:35:00 AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 2 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/8/2016 8:35:00									
Sample ID: FTBL-IS-002-110816RRE			Collected: AM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE

11/8/2016 8:15:00									
Sample ID: FTBL-IS-003-110816A-R			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

11/8/2016 8:15:00									
Sample ID: FTBL-IS-003-110816A-R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 3 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-003-110816A-RRE		Collected: 11/8/2016 8:15:00 AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

Sample ID: FTBL-IS-003-110816B-R		Collected: 11/8/2016 9:15:00 AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.067	JN	0.21	LOD	0.21	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 4 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/8/2016 9:15:00

Sample ID:FTBL-IS-003-110816B-R		Collected:AM		Analysis Type:Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

11/8/2016 9:15:00									
Sample ID:FTBL-IS-003-110816B-RRE			Collected:AM		Analysis Type:Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE

Sample ID: FTBL-IS-003-110816C-R			11/8/2016 10:15:00		Collected: AM			Analysis Type: Initial1		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code		
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs		
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs		
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs		
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs		
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs		
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs		
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs		
3-NITROTOLUENE	0.073	U,i	0.073	LOD	0.082	LOQ	mg/Kg	UJ	Lcs		
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs		

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 5 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-003-110816C-R		Collected: 11/8/2016 10:15:00 AM		Analysis Type: Initial1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-003-110816C-R		Collected: 11/8/2016 10:15:00 AM		Analysis Type: Initial2		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-003-110816C-RRE		Collected: 11/8/2016 10:15:00 AM		Analysis Type: Reanalysis-1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 6 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/8/2016 10:10:00									
Sample ID: FTBL-IS-004-110816R		Collected: AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.082	U,i	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

11/8/2016 10:10:00									
Sample ID: FTBL-IS-004-110816R		Collected: AM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U,i	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

11/8/2016 10:10:00									
Sample ID: FTBL-IS-004-110816RRE		Collected: AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 7 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/8/2016 10:10:00									
Sample ID: FTBL-IS-004-110816RRE		Collected: AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

11/8/2016 11:15:00									
Sample ID: FTBL-IS-005-110816R		Collected: AM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

11/8/2016 11:15:00									
Sample ID: FTBL-IS-005-110816RRE		Collected: AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 8 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/8/2016 11:15:00									
Sample ID: FTBL-IS-005-110816RRE			Collected: AM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE

11/8/2016 10:45:00									
Sample ID: FTBL-IS-007-110816R			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

11/8/2016 10:45:00									
Sample ID: FTBL-IS-007-110816R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 9 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-007-110816RRE		Collected: 11/8/2016 10:45:00 AM		Analysis Type: Reanalysis-1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

Sample ID: FTBL-IS-028-110816R		Collected: 11/8/2016 12:55:00 PM		Analysis Type: Initial1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.093	U,i	0.093	LOD	0.093	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 10 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-028-110816R		Collected: 11/8/2016 12:55:00 PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-028-110816R		Collected: 11/8/2016 12:55:00 PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U,i	0.021	LOD	0.082	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-028-110816RRE		Collected: 11/8/2016 12:55:00 PM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE

Sample ID: FTBL-IS-029-110816R		Collected: 11/8/2016 1:50:00 PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 11 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/8/2016 1:50:00									
Sample ID: FTBL-IS-029-110816R		Collected: PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

11/8/2016 1:50:00									
Sample ID: FTBL-IS-029-110816R		Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/8/2016 1:50:00									
Sample ID: FTBL-IS-029-110816RRE		Collected: PM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 12 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-030-110816A-R		Collected: 11/8/2016 12:15:00 PM		Analysis Type: Initial1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.077	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-030-110816A-R		Collected: 11/8/2016 12:15:00 PM		Analysis Type: Initial2		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.077	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.039	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.039	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.077	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.077	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.077	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.039	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.077	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-030-110816A-RRE		Collected: 11/8/2016 12:15:00 PM		Analysis Type: Reanalysis-1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 13 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/8/2016 12:15:00									
Sample ID: FTBL-IS-030-110816A-RRE		Collected: PM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

11/8/2016 1:15:00									
Sample ID: FTBL-IS-030-110816B-R		Collected: PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.078	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.039	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.039	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.078	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.078	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.078	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.039	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.078	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

11/8/2016 1:15:00									
Sample ID: FTBL-IS-030-110816B-R		Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.078	LOQ	mg/Kg	UJ	Lcs

11/8/2016 1:15:00									
Sample ID: FTBL-IS-030-110816B-RRE		Collected: PM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 14 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/8/2016 1:15:00									
Sample ID: FTBL-IS-030-110816B-RRE			Collected: PM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

11/8/2016 2:00:00									
Sample ID: FTBL-IS-030-110816C-R			Collected: PM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

11/8/2016 2:00:00									
Sample ID: FTBL-IS-030-110816C-R			Collected: PM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 15 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/8/2016 2:00:00									
Sample ID: FTBL-IS-030-110816C-R			Collected: PM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

11/8/2016 2:00:00									
Sample ID: FTBL-IS-030-110816C-RRE			Collected: PM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

11/8/2016 2:30:00									
Sample ID: FTBL-IS-031-110816R			Collected: PM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

11/8/2016 2:30:00									
Sample ID: FTBL-IS-031-110816R			Collected: PM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 16 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-031-110816R

Collected: PM 11/8/2016 2:30:00

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-031-110816RRE

Collected: PM 11/8/2016 2:30:00

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 17 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-054-110816R		Collected: 11/8/2016 3:00:00 PM		Analysis Type: Initial		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.092	U,i	0.092	LOD	0.092	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-054-110816RRE		Collected: 11/8/2016 3:00:00 PM		Analysis Type: Reanalysis-1		Dilution: 1			
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 18 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-054-110816RRE

Collected: 11/8/2016 3:00:00 PM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 19 of 20

Data Qualifier Summary

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Lcs	Laboratory Control Spike Upper Estimation
Lt	Laboratory Triplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Upper Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Rejection

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:42:06 PM

ADR version 1.9.0.325

Page 20 of 20

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1613773

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Preparation Method: EPA 3535A

Matrix: Soil

Sample ID	Type	Actual	Criteria	Units	Flag
FTBL-IS-001-110816RRE (Reanalysis)	Sampling To Extraction	36.00	14.00	DAYS	J (all detects)
FTBL-IS-002-110816RRE (Reanalysis)		36.00	14.00	DAYS	R (all non-detects)
FTBL-IS-003-110816A-RMS (Initial)		36.00	14.00	DAYS	
FTBL-IS-003-110816A-RMSD (Initial)		36.00	14.00	DAYS	
FTBL-IS-003-110816A-RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-003-110816A-RREP3 (Initial)		36.00	14.00	DAYS	
FTBL-IS-003-110816A-RREP6 (Initial)		36.00	14.00	DAYS	
FTBL-IS-003-110816B-RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-003-110816C-RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-004-110816RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-005-110816RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-007-110816RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-028-110816RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-029-110816RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-030-110816A-RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-030-110816B-RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-030-110816C-RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-031-110816RRE (Reanalysis)		36.00	14.00	DAYS	
FTBL-IS-054-110816RRE (Reanalysis)		36.00	14.00	DAYS	

Project Name and Number: 06261038.0001.00400 -

1/9/2017 2:19:27 PM

ADR version 1.9.0.325

Page 1 of 1

Method Blank Outlier Report

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610461-7	12/10/2016 5:24:00 AM	3-NITROTOLUENE	0.33 mg/Kg	FTBL-IS-001-110816R FTBL-IS-002-110816R FTBL-IS-003-110816A-R FTBL-IS-003-110816B-R FTBL-IS-003-110816C-R FTBL-IS-004-110816R FTBL-IS-005-110816R FTBL-IS-007-110816R FTBL-IS-028-110816R FTBL-IS-029-110816R FTBL-IS-030-110816A-R FTBL-IS-030-110816B-R FTBL-IS-030-110816C-R FTBL-IS-031-110816R FTBL-IS-054-110816R
KWG1610461-8	12/10/2016 4:48:00 AM	3-NITROTOLUENE	0.096 mg/Kg	FTBL-IS-001-110816R FTBL-IS-002-110816R FTBL-IS-003-110816A-R FTBL-IS-003-110816B-R FTBL-IS-003-110816C-R FTBL-IS-004-110816R FTBL-IS-005-110816R FTBL-IS-007-110816R FTBL-IS-028-110816R FTBL-IS-029-110816R FTBL-IS-030-110816A-R FTBL-IS-030-110816B-R FTBL-IS-030-110816C-R FTBL-IS-031-110816R FTBL-IS-054-110816R
KWG1611226-7	12/17/2016 10:39:00 AM	2,6-DINITROTOLUENE 3-NITROTOLUENE	0.024 mg/Kg 0.57 mg/Kg	FTBL-IS-001-110816RRE FTBL-IS-002-110816RRE FTBL-IS-003-110816A-RRE FTBL-IS-003-110816B-RRE FTBL-IS-003-110816C-RRE FTBL-IS-004-110816RRE FTBL-IS-005-110816RRE FTBL-IS-007-110816RRE FTBL-IS-028-110816RRE FTBL-IS-029-110816RRE FTBL-IS-030-110816A-RRE FTBL-IS-030-110816B-RRE FTBL-IS-030-110816C-RRE FTBL-IS-031-110816RRE FTBL-IS-054-110816RRE
KWG1611226-8	12/17/2016 10:03:00 AM	1,3,5-TRINITROBENZENE 3-NITROTOLUENE	0.070 mg/Kg 0.11 mg/Kg	FTBL-IS-001-110816RRE FTBL-IS-002-110816RRE FTBL-IS-003-110816A-RRE FTBL-IS-003-110816B-RRE FTBL-IS-003-110816C-RRE FTBL-IS-004-110816RRE FTBL-IS-005-110816RRE FTBL-IS-007-110816RRE FTBL-IS-028-110816RRE FTBL-IS-029-110816RRE FTBL-IS-030-110816A-RRE FTBL-IS-030-110816B-RRE FTBL-IS-030-110816C-RRE FTBL-IS-031-110816RRE FTBL-IS-054-110816RRE

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:19:29 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-003-110816A-RMS (FTBL-IS-003-110816A-R)	1,3,5-TRINITROBENZENE	128	-	80.00-116.00	-	1,3,5-TRINITROBENZENE	J (all detects)
	1,3-DINITROBENZENE	128	-	73.00-119.00	-	1,3-DINITROBENZENE	
	2,4,6-TRINITROTOLUENE	128	-	71.00-120.00	-	2,4,6-TRINITROTOLUENE	
	2,4-DINITROTOLUENE	129	-	75.00-121.00	-	2,4-DINITROTOLUENE	
	2,6-DINITROTOLUENE	130	-	79.00-117.00	-	2,6-DINITROTOLUENE	
	2-NITROTOLUENE	127	-	70.00-124.00	-	2-NITROTOLUENE	
	3-NITROTOLUENE	130	-	67.00-129.00	-	3-NITROTOLUENE	
	4-NITROTOLUENE	125	-	71.00-124.00	-	4-NITROTOLUENE	
	HMX	126	-	74.00-124.00	-	HMX	
	NITROBENZENE	130	-	67.00-129.00	-	NITROBENZENE	
	NITROGLYCERIN	133	-	73.00-124.00	-	NITROGLYCERIN	
	Pentaerythritol Tetranitrate (PETN)	138	-	72.00-128.00	-	Pentaerythritol Tetranitrate (PETN)	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:19:31 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Replicate Outlier Report

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Sample ID)	Analyte	Sample % RSD	eQAPP % RSD	Flag
FTBL-IS-003-110816A-RREP1 FTBL-IS-003-110816A-RREP3 FTBL-IS-003-110816A-RREP4 FTBL-IS-003-110816A-RREP6 (FTBL-IS-003-110816A-R)	NITROBENZENE	73.64	20.00	No Qual, <5x RL

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/11/2017 9:21:06 AM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610461-6 (FTBL-IS-001-110816R FTBL-IS-002-110816R FTBL-IS-003-110816A-R FTBL-IS-003-110816B-R FTBL-IS-003-110816C-R FTBL-IS-004-110816R FTBL-IS-005-110816R FTBL-IS-007-110816R FTBL-IS-028-110816R FTBL-IS-029-110816R FTBL-IS-030-110816A-R FTBL-IS-030-110816B-R FTBL-IS-030-110816C-R FTBL-IS-031-110816R FTBL-IS-054-110816R)	Tetryl	0	-	68.00-135.00	-	Tetryl	J (all detects) R (all non-detects)
KWG1610461-6 (FTBL-IS-001-110816R FTBL-IS-002-110816R FTBL-IS-003-110816A-R FTBL-IS-003-110816B-R FTBL-IS-003-110816C-R FTBL-IS-004-110816R FTBL-IS-005-110816R FTBL-IS-007-110816R FTBL-IS-028-110816R FTBL-IS-029-110816R FTBL-IS-030-110816A-R FTBL-IS-030-110816B-R FTBL-IS-030-110816C-R FTBL-IS-031-110816R FTBL-IS-054-110816R)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	10 35 23 49 55 55 61 61 56 58 65 55 36 49 61	- - - - - - - - - - - - - - -	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00	- - - - - - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	J(all detects) UJ(all non-detects)
KWG1611226-5 KWG1611226-6 (FTBL-IS-001-110816RRE FTBL-IS-002-110816RRE FTBL-IS-003-110816A-RRE FTBL-IS-003-110816B-RRE FTBL-IS-003-110816C-RRE FTBL-IS-004-110816RRE FTBL-IS-005-110816RRE FTBL-IS-007-110816RRE FTBL-IS-028-110816RRE FTBL-IS-029-110816RRE FTBL-IS-030-110816A-RRE FTBL-IS-030-110816B-RRE FTBL-IS-030-110816C-RRE FTBL-IS-031-110816RRE FTBL-IS-054-110816RRE)	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX Tetryl	149 148 145 142 143 173 139 162 160 158 141	- - - - - - - - - - -	80.00-116.00 73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 74.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00 68.00-135.00	- - - - - - - - - - -	1,3,5-TRINITROBENZENE 1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX Tetryl	J(all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:19:35 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-IS-003-110816B-R	NITROGLYCERIN	JN	0.067	0.21	LOQ	mg/Kg	J (all detects)

Field Triplicate RSD Report

Lab Reporting Batch ID: K1613773

Laboratory: ALS_K

EDD Filename: K1613773_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-003-110816A-R	FTBL- IS-003-110816B-R	FTBL- IS-003-110816C-R			
NITROGLYCERIN	0.21 U	0.067	0.21 U	NC	20.00	No Qualifiers Applied

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:19:40 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37819A40
SDG #: K1613773
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR/N

Date: 4/17
Page: 1 of 2
Reviewer: Q
2nd Reviewer: C

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/W	ADREs - HT out
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates /TR	N	Not reviewed for ADR validation.
VIII.	Laboratory control samples	N	Not reviewed for ADR validation.
IX.	Field duplicates	ND	TP = 1 + 3 + 5 (K) 2 + 4 + 6, 9 + 11 + 13, 10 + 12 + 14
X.	Compound quantitation RL/LOQ/LODs	W	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Overall assessment of data	W	Not reviewed for ADR validation.

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

**Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-003-110816A-R	K1613773-001	Soil	11/08/16
2	FTBL-IS-003-110816A-RRE	K1613773-001RE	Soil	11/08/16
3	FTBL-IS-003-110816B-R	K1613773-002	Soil	11/08/16
4	FTBL-IS-003-110816B-RRE	K1613773-002RE	Soil	11/08/16
5	FTBL-IS-003-110816C-R	K1613773-003	Soil	11/08/16
6	FTBL-IS-003-110816C-RRE	K1613773-003RE	Soil	11/08/16
7	FTBL-IS-005-110816-R	K1613773-004	Soil	11/08/16
8	FTBL-IS-005-110816-RRE	K1613773-004RE	Soil	11/08/16
9	FTBL-IS-030-110816A-R	K1613773-005	Soil	11/08/16
10	FTBL-IS-030-110816A-RRE	K1613773-005RE	Soil	11/08/16
11	FTBL-IS-030-110816B-R	K1613773-006	Soil	11/08/16
12	FTBL-IS-030-110816B-RRE	K1613773-006RE	Soil	11/08/16
13	FTBL-IS-030-110816C-R	K1613773-007	Soil	11/08/16
14	FTBL-IS-030-110816C-RRE	K1613773-007RE	Soil	11/08/16
15	FTBL-IS-031-110816-R**	K1613773-008**	Soil	11/08/16
16	FTBL-IS-031-110816-RRE**	K1613773-008RE**	Soil	11/08/16

LDC #: 37819A40
 SDG #: K1613773
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR/IV

Date: 1/4/17
 Page: 2 of 2
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
17	FTBL-IS-001-110816-R	K1613773-009**	Soil	11/08/16
18	FTBL-IS-001-110816-RRE	K1613773-009RE**	Soil	11/08/16
19	FTBL-IS-002-110816-R	K1613773-010	Soil	11/08/16
20	FTBL-IS-002-110816-RRE	K1613773-010RE	Soil	11/08/16
21	FTBL-IS-054-110816-R	K1613773-011	Soil	11/08/16
22	FTBL-IS-054-110816-RRE	K1613773-011RE	Soil	11/08/16
23	FTBL-IS-007-110816-R	K1613773-012	Soil	11/08/16
24	FTBL-IS-007-110816-RRE	K1613773-012RE	Soil	11/08/16
25	FTBL-IS-028-110816-R	K1613773-013	Soil	11/08/16
26	FTBL-IS-028-110816-RRE	K1613773-013RE	Soil	11/08/16
27	FTBL-IS-004-110816-R	K1613773-014	Soil	11/08/16
28	FTBL-IS-004-110816-RRE	K1613773-014RE	Soil	11/08/16
29	FTBL-IS-029-110816-R	K1613773-015	Soil	11/08/16
30	FTBL-IS-029-110816-RRE	K1613773-015RE	Soil	11/08/16
31	FTBL-IS-003-110816A-RMS	K1613773-001MS	Soil	11/08/16
32	FTBL-IS-003-110816A-RMSD	K1613773-001MSD	Soil	11/08/16
33	FTBL-IS-003-110816A-RDUP	K1613773-001DUP	Soil	11/08/16
34	FTBL-IS-003-110816A-RTRP	K1613773-001TRP	Soil	11/08/16
35	FTBL-IS-003-110816A-RREMS	K1613773-001REMS	Soil	11/08/16
36	FTBL-IS-003-110816A-RREMSD	K1613773-001REMSD	Soil	11/08/16
37	FTBL-IS-003-110816A-RREDUP	K1613773-001REDUP	Soil	11/08/16
38	FTBL-IS-003-110816A-RRETRP	K1613773-001RETRP	Soil	11/08/16
39				
40				
41				
42				
43				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 37819A40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer:

2nd Reviewer: a

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level ~~IV~~ D Only

~~Y~~ ~~N~~ ~~N/A~~ Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y, N, N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

<u>Y</u> / <u>N</u> /N/A		Did the relative percent differences of detected compounds between two columns./detectors ≤40%?
--------------------------	--	---

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

VALIDATION FINDINGS WORKSHEET

Overall Assessment of Data

METHOD: GC/HPLC

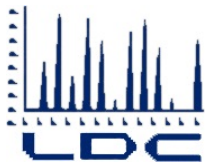
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

[illegible]

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

January 10, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fractions listed below. This SDG was received on December 23, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #37804:

<u>SDG #</u>	<u>Fraction:</u>
K1613891	Metals, Explosives

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

**Data Validation Report
Fort Bliss, Castner Range**

SDG: K1613891

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

January 10, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III data validation results for samples collected during the November 2016 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the EPA CLPNFG for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Arsenic by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), laboratory blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample (LCS), laboratory triplicate samples (TRP), and standard reference materials (SRM), and field triplicates.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, calibration blanks, interference check samples, and serial dilutions, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met with the exception of fourteen samples for explosives. Due to grossly exceeding holding times (e.g., >2x recommended holding time), 219 explosive results were qualified as rejected (R). Additionally, the remainder of the data were qualified as estimated (J). The details regarding the qualification of data are provided in Enclosure I.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of one method blank for 3-nitrotoluene and nitroglycerine, one storage blank for 3-nitrotoluene, and one storage blank for nitrobenzene. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank were not qualified. The details regarding the qualification of data are provided in Enclosure I.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of several explosives in one MS/MSD pairs. The associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable.

The details are provided in Enclosures I

IX. Triplicate Sample Analysis

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

X. Serial Dilution

Serial dilution was not performed for this SDG.

XI. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits with the exception of one SRM sample for several explosives. The 1,3,5-trinitrobenzene and tetryl results in all initial samples in SDG K1613891 was qualified as rejected (R) due to LCS %Rs grossly outside QC limits (i.e., $\leq 10\%$). The remainder of the associated sample results were qualified as detected estimated (J) or non-detected estimated (UJ) as applicable. The details regarding the qualification of data are provided in Enclosure I.

XII. Field Triplicates

Two sets of field triplicates were collected and analyzed for explosives. All RPDs were within QC limits with the exception of several explosives in both triplicate sets. No data was qualified on the basis of field triplicate RPDs outside the QC limits. The field triplicate result comparisons are provided in Enclosure I.

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613891/ 8330B	FTBL-IS-115-111016RRE FTBL-IS-035-111016A-RRE FTBL-IS-107-111016R	Nitrobenzene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1613891/ 8330B	FTBL-IS-035-111016C-R FTBL-IS-013-111016R FTBL-IS-024-111016R FTBL-IS-018-111016R	3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613891/ 8330B	FTBL-IS-025-111016RRE	Pentaerythritol Tetranitrate	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1613891/ 8330B	FTBL-IS-017-111016RRE FTBL-IS-107-111016RRE	Nitroglycerin	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

SDG/ Method	Sample	Compound	RPD	Flag	A or P
K1613891/ 8330B	FTBL-IS-035-111016A-R	Nitrobenzene	46.4	J (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed unusable as follows:

SDG/ Method	Sample	Compound	Flag	A or P
K1613891/ 8330B	FTBL-IS-155-111016RRE FTBL-IS-035-111016A-RRE FTBL-IS-035-111016B-RRE FTBL-IS-035-111016C-RRE FTBL-IS-014-111016RRE FTBL-IS-013-111016RRE FTBL-IS-072-111016RRE FTBL-IS-027-111016RRE FTBL-IS-026-111016RRE FTBL-IS-024-111016RRE FTBL-IS-025-111016RRE FTBL-IS-017-111016RRE FTBL-IS-018-111016RRE FTBL-IS-107-111016RRE	All TCL compounds	R	A

Due to SRM %R exceedances, data were qualified as rejected in fourteen samples.

Due to MS/MSD %R and RPD exceedances, data were qualified as estimated in one sample.

Due to SRM %R, data were qualified as estimated in fourteen samples.

Due to results below the LOQ, data were qualified as estimated in three samples.

Due to results not being confirmed, data were qualified as presumptive in five samples.

Due to RPD between two columns, data were qualified as estimated in one sample.

Due to laboratory blank contamination, data were qualified as non-detect in four samples.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
10-Nov-2016	FTBL-IS-027-111016R	K1613891-008	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-027-111016RRE	K1613891-008RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016R	K1613891-001	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RRE	K1613891-001RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RREP1	KWG1610604-1	REP	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RREP4	KWG1610604-2	REP	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RMS	KWG1610604-3	MS	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RMSD	KWG1610604-4	MSD	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RREP3	KWG1611263-1	REP	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RREP6	KWG1611263-2	REP	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RMS	KWG1611263-3	MS	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-155-111016RMSD	KWG1611263-4	MSD	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-026-111016R	K1613891-009	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-026-111016RRE	K1613891-009RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-035-111016A-R	K1613891-002	FT	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-035-111016A-RRE	K1613891-002RE	FT	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-024-111016R	K1613891-010	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-024-111016RRE	K1613891-010RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-035-111016B-R	K1613891-003	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-035-111016B-RRE	K1613891-003RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-025-111016R	K1613891-011	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-025-111016RRE	K1613891-011RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-035-111016C-R	K1613891-004	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-035-111016C-RRE	K1613891-004RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-017-111016R	K1613891-012	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-017-111016RRE	K1613891-012RE	N	EPA 3535A	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
10-Nov-2016	FTBL-IS-014-111016R	K1613891-005	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-014-111016RRE	K1613891-005RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-018-111016R	K1613891-013	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-018-111016RRE	K1613891-013RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-013-111016R	K1613891-006	N	EPA 3050B	6020A	III
10-Nov-2016	FTBL-IS-013-111016R	K1613891-006	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-013-111016RRE	K1613891-006RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-107-111016R	K1613891-014	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-107-111016RRE	K1613891-014RE	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-072-111016R	K1613891-007	N	EPA 3535A	8330B	III
10-Nov-2016	FTBL-IS-072-111016RRE	K1613891-007RE	N	EPA 3535A	8330B	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID: FTBL-IS-013-111016R		Collected: PM		11/10/2016 1:00:00		Analysis Type: Initial1		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.038	JN	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg

Sample ID: FTBL-IS-013-111016R		Collected: PM		11/10/2016 1:00:00		Analysis Type: Initial2		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-013-111016RRE		Collected: PM		11/10/2016 1:00:00		Analysis Type: Reanalysis-1		Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 1 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/10/2016 1:00:00									
Sample ID: FTBL-IS-013-111016RRE	Collected: PM			Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

11/10/2016 11:40:00									
Sample ID: FTBL-IS-014-111016R	Collected: AM			Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

11/10/2016 11:40:00									
Sample ID: FTBL-IS-014-111016R	Collected: AM			Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

11/10/2016 11:40:00									
Sample ID: FTBL-IS-014-111016RRE	Collected: AM			Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 2 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/10/2016 11:40:00									
Sample ID: FTBL-IS-014-111016RRE			Collected: AM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg

11/10/2016 11:10:00									
Sample ID: FTBL-IS-017-111016R			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	UJ	Lcs

11/10/2016 11:10:00									
Sample ID: FTBL-IS-017-111016R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.042	U	0.042	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.042	U	0.042	LOD	0.083	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.042	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 3 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/10/2016 11:10:00									
Sample ID: FTBL-IS-017-111016R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.083	U	0.083	LOD	0.083	LOQ	mg/Kg	R	Lcs

11/10/2016 11:10:00									
Sample ID: FTBL-IS-017-111016RRE			Collected: AM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.061	JN	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg

11/10/2016 12:00:00									
Sample ID: FTBL-IS-018-111016R			Collected: PM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.023	JN	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg

11/10/2016 12:00:00									
Sample ID: FTBL-IS-018-111016R			Collected: PM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 4 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/10/2016 12:00:00									
Sample ID: FTBL-IS-018-111016R			Collected: PM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

11/10/2016 12:00:00									
Sample ID: FTBL-IS-018-111016RRE			Collected: PM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 5 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/10/2016 9:25:00									
Sample ID: FTBL-IS-024-111016R			Collected: AM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

11/10/2016 9:25:00									
Sample ID: FTBL-IS-024-111016R			Collected: AM		Analysis Type: Initial2			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.027	JN	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg

11/10/2016 9:25:00									
Sample ID: FTBL-IS-024-111016RRE			Collected: AM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 6 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-024-111016RRE
Collected: 11/10/2016 9:25:00 AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-025-111016R
Collected: 11/10/2016 10:10:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-025-111016R
Collected: 11/10/2016 10:10:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-025-111016RRE
Collected: 11/10/2016 10:10:00 AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 7 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-025-111016RRE Collected: 11/10/2016 10:10:00 AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.12	JN	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-026-111016R Collected: 11/10/2016 8:45:00 AM

Analysis Type: Initial1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 8 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

Sample ID:FTBL-IS-026-111016R		Collected:AM		11/10/2016 8:45:00				Analysis Type:Initial2		Dilution: 1	
Analyte		Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code	
3-NITROTOLUENE		0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs	

Sample ID:FTBL-IS-026-111016RRE		Collected:AM			Analysis Type:Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID:FTBL-IS-027-111016R			11/10/2016 7:30:00 Collected:AM		Analysis Type:Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 9 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-027-111016R		Collected: 11/10/2016 7:30:00 AM		Analysis Type: Initial1			Dilution: 1		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-027-111016R		Collected: 11/10/2016 7:30:00 AM		Analysis Type: Initial2			Dilution: 1		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-027-111016RRE		Collected: 11/10/2016 7:30:00 AM		Analysis Type: Reanalysis-1			Dilution: 1		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.082	U	0.082	LOD	0.082	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-035-111016A-R		Collected: 11/10/2016 9:00:00 AM		Analysis Type: Initial1			Dilution: 1		
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 10 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-035-111016A-R

Collected: 11/10/2016 9:00:00 AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0081	JP	0.020	LOD	0.080	LOQ	mg/Kg	J	RI, Lcs, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-035-111016A-RRE

Collected: 11/10/2016 9:00:00 AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.0076	JN	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 11 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-035-111016A-RRE		Collected: 11/10/2016 9:00:00 AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

Sample ID: FTBL-IS-035-111016B-R		Collected: 11/10/2016 9:45:00 AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs

Sample ID: FTBL-IS-035-111016B-R		Collected: 11/10/2016 9:45:00 AM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

Sample ID: FTBL-IS-035-111016B-RRE		Collected: 11/10/2016 9:45:00 AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

11/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 12 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/10/2016 9:45:00									
Sample ID: FTBL-IS-035-111016B-RRE	Collected: AM			Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

11/10/2016 10:40:00									
Sample ID: FTBL-IS-035-111016C-R	Collected: AM			Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.027	JN	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs, Mb, ProfJudg

11/10/2016 10:40:00									
Sample ID: FTBL-IS-035-111016C-R	Collected: AM			Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 13 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/10/2016 10:40:00									
Sample ID: FTBL-IS-035-111016C-RRE			Collected: AM		Analysis Type: Reanalysis-1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg

11/10/2016 2:00:00									
Sample ID: FTBL-IS-072-111016R			Collected: PM		Analysis Type: Initial1			Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 14 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/10/2016 2:00:00									
Sample ID: FTBL-IS-072-111016R		Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.040	U	0.040	LOD	0.079	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.020	U	0.020	LOD	0.079	LOQ	mg/Kg	UJ	Lcs

11/10/2016 2:00:00									
Sample ID: FTBL-IS-072-111016RRE		Collected: PM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.040	U	0.040	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.040	U	0.040	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.020	U	0.020	LOD	0.040	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.020	U	0.020	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.20	U	0.20	LOD	0.20	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.080	U	0.080	LOD	0.080	LOQ	mg/Kg	R	StoE, ProfJudg

11/10/2016 1:20:00									
Sample ID: FTBL-IS-107-111016R		Collected: PM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.0052	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, Lcs, ProfJudg

11/10/2016 1:20:00									
Sample ID: FTBL-IS-107-111016R		Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 15 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category:	SVOA
Method:	8330B
Matrix:	Soil

11/10/2016 1:20:00									
Sample ID: FTBL-IS-107-111016R		Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.11	J	0.21	LOD	0.21	LOQ	mg/Kg	J	RI, Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Lcs

11/10/2016 1:20:00									
Sample ID: FTBL-IS-107-111016RRE		Collected: PM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.17	JN	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 16 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

11/10/2016 8:00:00									
Sample ID: FTBL-IS-155-111016R		Collected: AM		Analysis Type: Initial1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Ms, Lcs
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Ms, Lcs
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Ms, Lcs
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	UJ	Lcs
NITROBENZENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	UJ	Lcs
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	Ms, Lcs

11/10/2016 8:00:00									
Sample ID: FTBL-IS-155-111016R		Collected: AM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	UJ	Lcs

11/10/2016 8:00:00									
Sample ID: FTBL-IS-155-111016RRE		Collected: AM		Analysis Type: Reanalysis-1				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRINITROBENZENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
1,3-DINITROBENZENE	0.041	U	0.041	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2,4,6-TRINITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,4-DINITROTOLUENE	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
2,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-AMINO-4,6-DINITROTOLUENE	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg
2-NITROTOLUENE	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
3-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-Amino-2,6-Dinitrotoluene	0.021	U	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
4-NITROTOLUENE	0.041	U	0.041	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
HMX	0.021	U	0.021	LOD	0.041	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 17 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-155-111016RRE

Collected: 11/10/2016 8:00:00 AM

Analysis Type: Reanalysis-1

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.0057	JN	0.021	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg
NITROGLYCERIN	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Pentaerythritol Tetranitrate (PETN)	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
RDX	0.21	U	0.21	LOD	0.21	LOQ	mg/Kg	R	StoE, ProfJudg
Tetryl	0.081	U	0.081	LOD	0.081	LOQ	mg/Kg	R	StoE, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 18 of 19

Data Qualifier Summary

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Lcs	Laboratory Control Spike Lower Estimation
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Precision
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value
StoE	Sampling to Extraction Rejection

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 3:36:05 PM

ADR version 1.9.0.325

Page 19 of 19

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1613891

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: K1613891
EDD Filename: K1613891_SEDD2A_rev

Laboratory: ALS_K
eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B Preparation Method: EPA 3535A
Matrix: Soil

Sample ID	Type	Actual	Criteria	Units	Flag
FTBL-IS-013-111016RRE (Reanalysis)	Sampling To Extraction	35.00	14.00	DAYS	J (all detects)
FTBL-IS-014-111016RRE (Reanalysis)		35.00	14.00	DAYS	R (all non-detects)
FTBL-IS-017-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-018-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-024-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-025-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-026-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-027-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-035-111016A-RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-035-111016B-RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-035-111016C-RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-072-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-107-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-155-111016RMS (Initial)		35.00	14.00	DAYS	
FTBL-IS-155-111016RMSD (Initial)		35.00	14.00	DAYS	
FTBL-IS-155-111016RRE (Reanalysis)		35.00	14.00	DAYS	
FTBL-IS-155-111016RREP3 (Initial)		35.00	14.00	DAYS	
FTBL-IS-155-111016RREP6 (Initial)		35.00	14.00	DAYS	

Project Name and Number: 06261038.0001.00400 -

1/9/2017 2:11:28 PM

ADR version 1.9.0.325

Page 1 of 1

Method Blank Outlier Report

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1610604-7	12/20/2016 2:13:00 PM	3-NITROTOLUENE	0.034 mg/Kg	FTBL-IS-013-111016R FTBL-IS-014-111016R FTBL-IS-017-111016R FTBL-IS-018-111016R FTBL-IS-024-111016R FTBL-IS-025-111016R FTBL-IS-026-111016R FTBL-IS-027-111016R FTBL-IS-035-111016A-R FTBL-IS-035-111016B-R FTBL-IS-035-111016C-R FTBL-IS-072-111016R FTBL-IS-107-111016R FTBL-IS-155-111016R
KWG1611263-7	12/21/2016 6:14:00 AM	NITROBENZENE	0.010 mg/Kg	FTBL-IS-013-111016RRE FTBL-IS-014-111016RRE FTBL-IS-017-111016RRE FTBL-IS-018-111016RRE FTBL-IS-024-111016RRE FTBL-IS-025-111016RRE FTBL-IS-026-111016RRE FTBL-IS-027-111016RRE FTBL-IS-035-111016A-RRE FTBL-IS-035-111016B-RRE FTBL-IS-035-111016C-RRE FTBL-IS-072-111016RRE FTBL-IS-107-111016RRE FTBL-IS-155-111016RRE
KWG1611263-8	12/21/2016 10:56:00 AM	3-NITROTOLUENE NITROGLYCERIN	0.11 mg/Kg 0.075 mg/Kg	FTBL-IS-013-111016RRE FTBL-IS-014-111016RRE FTBL-IS-017-111016RRE FTBL-IS-018-111016RRE FTBL-IS-024-111016RRE FTBL-IS-025-111016RRE FTBL-IS-026-111016RRE FTBL-IS-027-111016RRE FTBL-IS-035-111016A-RRE FTBL-IS-035-111016B-RRE FTBL-IS-035-111016C-RRE FTBL-IS-072-111016RRE FTBL-IS-107-111016RRE FTBL-IS-155-111016RRE

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-013-111016R(Initial1)	3-NITROTOLUENE	0.038 mg/Kg	0.038U mg/Kg
FTBL-IS-017-111016RRE(Reanalysis-1)	NITROGLYCERIN	0.061 mg/Kg	0.061U mg/Kg
FTBL-IS-018-111016R(Initial2)	3-NITROTOLUENE	0.023 mg/Kg	0.023U mg/Kg
FTBL-IS-024-111016R(Initial2)	3-NITROTOLUENE	0.027 mg/Kg	0.027U mg/Kg
FTBL-IS-035-111016A-RRE(Reanalysis-1)	NITROBENZENE	0.0076 mg/Kg	0.0076U mg/Kg
FTBL-IS-035-111016C-R(Initial1)	3-NITROTOLUENE	0.027 mg/Kg	0.027U mg/Kg
FTBL-IS-107-111016RRE(Reanalysis-1)	NITROGLYCERIN	0.17 mg/Kg	0.17U mg/Kg
FTBL-IS-155-111016RRE(Reanalysis-1)	NITROBENZENE	0.0057 mg/Kg	0.0057U mg/Kg

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:11:30 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-155-111016RMSD (FTBL-IS-155-111016R)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	- - - - - - - - - - - -	- - - - - - - - - - - -	73.00-119.00 71.00-120.00 75.00-121.00 71.00-123.00 70.00-124.00 67.00-129.00 64.00-127.00 74.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00	34 (20.00) 33 (20.00) 30 (20.00) 31 (20.00) 31 (20.00) 28 (20.00) 32 (20.00) 36 (20.00) 34 (20.00) 33 (20.00) 41 (20.00) 32 (20.00)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	J (all detects)
FTBL-IS-155-111016RMSD (FTBL-IS-155-111016R)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 4-NITROTOLUENE Tetryl	- - - -	72 75 70 66	80.00-116.00 79.00-117.00 71.00-124.00 68.00-135.00	40 (20.00) 35 (20.00) 30 (20.00) 45 (20.00)	1,3,5-TRINITROBENZENE 2,6-DINITROTOLUENE 4-NITROTOLUENE Tetryl	J(all detects) UJ(all non-detects)
FTBL-IS-155-111016RMS (FTBL-IS-155-111016R)	RDX	66	-	67.00-129.00	-	RDX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:11:32 PM

ADR version 1.9.0.325

Page 1 of 1

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	LCS %R	LCSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
KWG1610604-6 (FTBL-IS-013-111016R FTBL-IS-014-111016R FTBL-IS-017-111016R FTBL-IS-018-111016R FTBL-IS-024-111016R FTBL-IS-025-111016R FTBL-IS-026-111016R FTBL-IS-027-111016R FTBL-IS-035-111016A-R FTBL-IS-035-111016B-R FTBL-IS-035-111016C-R FTBL-IS-072-111016R FTBL-IS-107-111016R FTBL-IS-155-111016R)	1,3,5-TRINITROBENZENE Tetryl	0 0	- -	80.00-116.00 68.00-135.00	- -	1,3,5-TRINITROBENZENE Tetryl	J (all detects) R (all non-detects)
KWG1610604-6 (FTBL-IS-013-111016R FTBL-IS-014-111016R FTBL-IS-017-111016R FTBL-IS-018-111016R FTBL-IS-024-111016R FTBL-IS-025-111016R FTBL-IS-026-111016R FTBL-IS-027-111016R FTBL-IS-035-111016A-R FTBL-IS-035-111016B-R FTBL-IS-035-111016C-R FTBL-IS-072-111016R FTBL-IS-107-111016R FTBL-IS-155-111016R)	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	38 17 45 49 49 49 48 48 47 67 49 21 29 60	- - - - - - - - - - - - -	73.00-119.00 71.00-120.00 75.00-121.00 79.00-117.00 71.00-123.00 70.00-124.00 67.00-129.00 64.00-127.00 71.00-124.00 74.00-124.00 67.00-129.00 73.00-124.00 72.00-128.00 67.00-129.00	- - - - - - - - - - - - -	1,3-DINITROBENZENE 2,4,6-TRINITROTOLUENE 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE 2-AMINO-4,6-DINITROTOLUENE 2-NITROTOLUENE 3-NITROTOLUENE 4-Amino-2,6-Dinitrotoluene 4-NITROTOLUENE HMX NITROBENZENE NITROGLYCERIN Pentaerythritol Tetranitrate (PETN) RDX	J(all detects) UJ(all non-detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:11:34 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-013-111016R	3-NITROTOLUENE	JN	0.038	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-017-111016RRE	NITROGLYCERIN	JN	0.061	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-018-111016R	3-NITROTOLUENE	JN	0.023	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-024-111016R	3-NITROTOLUENE	JN	0.027	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-025-111016RRE	Pentaerythritol Tetranitrate (PETN)	JN	0.12	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-035-111016A-R	NITROBENZENE	JP	0.0081	0.080	LOQ	mg/Kg	J (all detects)
FTBL-IS-035-111016A-RRE	NITROBENZENE	JN	0.0076	0.081	LOQ	mg/Kg	J (all detects)
FTBL-IS-035-111016C-R	3-NITROTOLUENE	JN	0.027	0.079	LOQ	mg/Kg	J (all detects)
FTBL-IS-107-111016R	NITROBENZENE NITROGLYCERIN	JN J	0.0052 0.11	0.081 0.21	LOQ LOQ	mg/Kg mg/Kg	J (all detects)
FTBL-IS-107-111016RRE	NITROGLYCERIN	JN	0.17	0.21	LOQ	mg/Kg	J (all detects)
FTBL-IS-155-111016RRE	NITROBENZENE	JN	0.0057	0.081	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:11:36 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1613891

Laboratory: ALS_K

EDD Filename: K1613891_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-035-111016A-R	FTBL- IS-035-111016B-R	FTBL- IS-035-111016C-R			
3-NITROTOLUENE	0.040 U	0.040 U	0.027	NC	20.00	No Qualifiers Applied
NITROBENZENE	0.0081	0.020 U	0.020 U	NC	20.00	

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-035-111016A-	FTBL- IS-035-111016B-	FTBL- IS-035-111016C-			
NITROBENZENE	0.0076	0.021 U	0.020 U	NC	20.00	No Qualifiers Applied

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
 NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

1/9/2017 2:11:39 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 37804A4a
 SDG #: K1613891
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 11/6/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Arsenic (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	Not Performed
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-013-111016R	K1613891-006	Soil	11/10/16
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

ICPMS Tune from SDG: K1613587

LDC #: 37804A40
SDG #: K1613891
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/V

Date: 12/28/16
Page: 1 of 2
Reviewer: Q
2nd Reviewer:

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/W	RRs - HT out
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	
V.	Field blanks		
VI.	Surrogate spikes		Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates		Not reviewed for ADR validation.
VIII.	Laboratory control samples		Not reviewed for ADR validation.
IX.	Field duplicates	NQ	TP = 3+5+7. 4+6, 8 (<5x#2)
X.	Compound quantitation RL/LOQ/LODs	W	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Overall assessment of data	W	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-155-111016R	K1613891-001	Soil	11/10/16
2	FTBL-IS-155-111016RRE	K1613891-001RE	Soil	11/10/16
3	FTBL-IS-035-111016A-R	K1613891-002	Soil	11/10/16
4	FTBL-IS-035-111016A-RRE	K1613891-002RE	Soil	11/10/16
5	FTBL-IS-035-111016B-R	K1613891-003	Soil	11/10/16
6	FTBL-IS-035-111016B-RRE	K1613891-003RE	Soil	11/10/16
7	FTBL-IS-035-111016C-R	K1613891-004	Soil	11/10/16
8	FTBL-IS-035-111016C-RRE	K1613891-004RE	Soil	11/10/16
9	FTBL-IS-014-111016R	K1613891-005	Soil	11/10/16
10	FTBL-IS-014-111016RRE	K1613891-005RE	Soil	11/10/16
11	FTBL-IS-013-111016R	K1613891-006	Soil	11/10/16
12	FTBL-IS-013-111016RRE	K1613891-006RE	Soil	11/10/16
13	FTBL-IS-072-111016R	K1613891-007	Soil	11/10/16
14	FTBL-IS-072-111016RRE	K1613891-007RE	Soil	11/10/16
15	FTBL-IS-027-111016R	K1613891-008	Soil	11/10/16
16	FTBL-IS-027-111016RRE	K1613891-008RE	Soil	11/10/16

LDC #: 37804A40
SDG #: K1613891
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 12/28/16
Page: 2 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

	Client ID	Lab ID	Matrix	Date
17	FTBL-IS-026-111016R	K1613891-009	Soil	11/10/16
18	FTBL-IS-026-111016RRE	K1613891-009RE	Soil	11/10/16
19	FTBL-IS-024-111016R	K1613891-010	Soil	11/10/16
20	FTBL-IS-024-111016RRE	K1613891-010RE	Soil	11/10/16
21	FTBL-IS-025-111016R	K1613891-011	Soil	11/10/16
22	FTBL-IS-025-111016RRE	K1613891-011RE	Soil	11/10/16
23	FTBL-IS-017-111016R	K1613891-012	Soil	11/10/16
24	FTBL-IS-017-111016RRE	K1613891-012RE	Soil	11/10/16
25	FTBL-IS-018-111016R	K1613891-013	Soil	11/10/16
26	FTBL-IS-018-111016RRE	K1613891-013RE	Soil	11/10/16
27	FTBL-IS-107-111016R	K1613891-014	Soil	11/10/16
28	FTBL-IS-107-111016RRE	K1613891-014RE	Soil	11/10/16
29	FTBL-IS-155-111016RMS	K1613891-001MS	Soil	11/10/16
30	FTBL-IS-155-111016RMSD	K1613891-001MSD	Soil	11/10/16
31	FTBL-IS-155-111016RDUP	K1613891-001DUP	Soil	11/10/16
32	FTBL-IS-155-111016RTRP	K1613891-001TRP	Soil	11/10/16
33	FTBL-IS-155-111016RREMS	K1613891-001REMS	Soil	11/10/16
34	FTBL-IS-155-111016RREMSD	K1613891-001REMSD	Soil	11/10/16
35	FTBL-IS-155-111016RREDUP	K1613891-001REDUP	Soil	11/10/16
36	FTBL-IS-155-111016RRETRP	K1613891-001RETRP	Soil	11/10/16
37				
38				
39				
40				
41				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141 (Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O. Nitroglycerin		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P. Picric acid		P. Fenthion		
Q.	Q. <i>Pentaerythritol Tetranitrate</i>		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLsMETHOD: GC / HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y N N/A

Did the relative percent differences of detected compounds between two columns./detectors $\leq 40\%$?

If no, please see findings below.

#	Compound Name	Sample ID	%RPD Between Two Columns/Detectors Limit ($\leq 40\%$)	Qualifications
	F	2, 4, 27	No confirmation	NI det 3/A
	F	3	46.4	det 3/A
	M	7, 11, 19, 25	No confirmation	NI det 3/A
	Q	22	↓	↓
	O	24, 28	↓	↓
	Q	27		

Comments: See sample calculation verification worksheet for recalculations

VALIDATION FINDINGS WORKSHEET

Overall Assessment of Data

METHOD: GC ~~HPLC~~

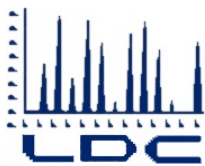
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

[illegible]

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

March 6, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on February 17, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #38117:

<u>SDG #</u>	<u>Fraction:</u>
K1700424, K1700612 K1700632, K1700809 K1700918	Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

**Data Validation Report
Fort Bliss, Castner Range**

**SDG: K1700424, K1700612, K1700632, K1700809, and
K1700918**

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

February 28, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the November 2016 through January 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Metals by Environmental Protection Agency (EPA) SW 846 Method 6010C by Synthetic Precipitation Leachate Procedure (SPLP)
Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, instrument performance check, initial and continuing calibrations, laboratory blanks, initial and continuing calibration blanks (ICB/CCBs), interference check (ICSA and ICSAB) samples, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), field triplicates, and internal standards. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the instrument performance check, calibrations, interference check samples, serial dilutions, and internal standards which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Instrument Performance Check

Instrument performance was checked at the frequency required by the methods.

All criteria for the instrument performance check were met.

III. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the methods were met.

IV. Continuing Calibration

All criteria for the continuing calibration verifications of the methods were met.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software program with the exception of one blank for antimony and zinc and one blank for antimony. The associated sample results were not detected or were significantly greater than the concentrations found in the blanks, therefore no data were qualified. The details are presented in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1700612/ 6020A	ICB/CCB	Antimony	0.05 ug/L	FTBL-IS-197-011917 FTBL-IS-196-011917 FTBL-IS-195-011917 FTBL-IS-193-011917 FTBL-IS-200-011917
K1700632/ 6020A	ICB/CCB	Antimony	0.05 ug/L	FTBL-IS-194-012017-A

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1700632/ 6020A	ICB/CCB	Antimony	0.04 ug/L	FTBL-IS-194-012017-B FTBL-IS-194-012017-C FTBL-IS-192-012017 FTBL-IS-189-012017 FTBL-IS-199-012017 FTBL-IS-198-012017
K1700809/ 6020A	ICB/CCB	Antimony	0.02 ug/L	FTBL-IS-180-012617 FTBL-IS-173-012617 FTBL-IS-158-012617-A FTBL-IS-158-012617-B FTBL-IS-158-012617-C
K1700918/ 6020A	ICB/CCB	Antimony	0.02 ug/L	FTBL-IS-165-012817-A FTBL-IS-165-012817-B FTBL-IS-165-012817-C

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks, therefore no data were qualified.

VII. Field Blanks

No field blanks were identified in these SDGs.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on associated project samples. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of antimony in three MS/MSD pairs. No data were qualified for a MS/MSD %R outside QC limits when the post spike was within QC limits.

IX. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicates (DUP) analyses specified for the samples in these SDGs, and therefore duplicate analyses were not performed.

X. Serial Dilution

Serial dilution analysis was performed on associated project samples. The analysis criteria were met.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XII. Field Triplicate Samples

Three sets of field triplicates were collected and analyzed for metals. All RSDs were within QC

limits with the exception of arsenic in one triplicate set. The associated sample results were qualified as detected estimated (J). No samples were qualified when one or more results were less than 5x the limit of quantitation (LOQ). The field triplicate result comparisons are provided in Enclosure I.

XIII. Internal Standards

All internal standard areas and percent recoveries were within QC limits.

XIV. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in these SDGs.

Due to field triplicate %RSD, data were qualified as estimated in three samples.

Due to results below the LOQ, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1

Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
07-Nov-2016	FTBL-IS-022-110716R	K1700424-001	N	EPA 3010A	6010C	III
07-Nov-2016	FTBL-IS-022-110716RMS	K1700424-001MS	MS	EPA 3010A	6010C	III
07-Nov-2016	FTBL-IS-022-110716RMSD	K1700424-001SD	MSD	CLAA	6010C	III
19-Jan-2017	FTBL-IS-196-011917	K1700612-002	N	EPA 3050B	6020A	IV
19-Jan-2017	FTBL-IS-197-011917	K1700612-001	N	EPA 3050B	6020A	IV
19-Jan-2017	FTBL-IS-197-011917MS	KQ1700939-03	MS	EPA 3050B	6020A	IV
19-Jan-2017	FTBL-IS-197-011917MSD	KQ1700939-04	MSD	EPA 3050B	6020A	IV
19-Jan-2017	FTBL-IS-195-011917	K1700612-003	N	EPA 3050B	6020A	IV
19-Jan-2017	FTBL-IS-193-011917	K1700612-004	N	EPA 3050B	6020A	III
19-Jan-2017	FTBL-IS-200-011917	K1700612-005	N	EPA 3050B	6020A	III
19-Jan-2017	FTBL-IS-182-011917	K1700612-006	N	EPA 3050B	6020A	III
19-Jan-2017	FTBL-IS-178-011917	K1700612-007	N	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-194-012017-A	K1700632-001	FT	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-194-012017-AMS	KQ1700937-03	MS	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-194-012017-AMSD	KQ1700937-04	MSD	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-194-012017-B	K1700632-002	N	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-194-012017-C	K1700632-003	N	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-192-012017	K1700632-004	N	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-189-012017	K1700632-005	N	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-199-012017	K1700632-006	N	EPA 3050B	6020A	III
20-Jan-2017	FTBL-IS-198-012017	K1700632-007	N	EPA 3050B	6020A	III
26-Jan-2017	FTBL-IS-180-012617	K1700809-001	N	EPA 3050B	6020A	III
26-Jan-2017	FTBL-IS-180-012617RE	K1700809-001RE	N	EPA 3050B	6020A	III
26-Jan-2017	FTBL-IS-179-012617	K1700809-002	N	EPA 3050B	6020A	III
26-Jan-2017	FTBL-IS-173-012617	K1700809-003	N	EPA 3050B	6020A	III
26-Jan-2017	FTBL-IS-158-012617-A	K1700809-004	FT	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
26-Jan-2017	FTBL-IS-158-012617-B	K1700809-005	N	EPA 3050B	6020A	III
26-Jan-2017	FTBL-IS-158-012617-C	K1700809-006	N	EPA 3050B	6020A	III
26-Jan-2017	FTBL-IS-171-012617	K1700809-007	N	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-165-012817-A	K1700918-001	FT	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-165-012817-B	K1700918-002	N	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-165-012817-C	K1700918-003	N	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-169-012817	K1700918-004	N	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-170-012817	K1700918-005	N	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-168-012817	K1700918-006	N	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-168-012817MS	KQ1701131-03	MS	EPA 3050B	6020A	III
28-Jan-2017	FTBL-IS-168-012817MSD	KQ1701131-04	MSD	EPA 3050B	6020A	III

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1700424, K1700612, K1700632,

Laboratory: ALS_K

EDD Filename: K1700424_SEDD2A, K1700612_SEDD2A,
K1700632_SEDD2A, K1700809_SEDD2A,
K1700918_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1700424

Method Category: METALS

Method: 6010C

Matrix: Soil

Sample ID: FTBL-IS-022-110716R **Collected:** 11/7/2016 2:15:00 PM

Analysis Type: Initial

Dilution: 1.0

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	0.008	J	0.010	LOD	0.010	LOQ	mg/L	J	RI

SDG: K1700632

Method Category: METALS

Method: 6020A

Matrix: Soil

Sample ID: FTBL-IS-194-012017-A **Collected:** 1/20/2017 8:40:00 AM

Analysis Type: Initial

Dilution: 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	9.38	=	0.13	LOD	0.50	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-194-012017-B **Collected:** 1/20/2017 9:15:00 AM

Analysis Type: Initial

Dilution: 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	8.51	=	0.12	LOD	0.49	LOQ	mg/Kg	J	Ft

Sample ID: FTBL-IS-194-012017-C **Collected:** 1/20/2017 9:55:00 AM

Analysis Type: Initial

Dilution: 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	13.1	=	0.12	LOD	0.50	LOQ	mg/Kg	J	Ft

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

2/28/2017 8:45:12 AM

ADR version 1.9.0.325

Page 1 of 2

Data Qualifier Summary

Lab Reporting Batch ID: K1700424, K1700612, K1700632,

Laboratory: ALS_K

EDD Filename: K1700424_SEDD2A, K1700612_SEDD2A,
K1700632_SEDD2A, K1700809_SEDD2A,
K1700918_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Ft	Field Triplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

2/28/2017 8:45:12 AM

ADR version 1.9.0.325

Page 2 of 2

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1700424

Reporting Limit Outliers

Lab Reporting Batch ID: K1700424

Laboratory: ALS_K

EDD Filename: K1700424_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6010C

Matrix: Soil

<i>SampleID</i>	<i>Analyte</i>	<i>Lab Qual</i>	<i>Result</i>	<i>Reporting Limit</i>	<i>RL Type</i>	<i>Units</i>	<i>Flag</i>
FTBL-IS-022-110716R	ARSENIC	J	0.008	0.010	LOQ	mg/L	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

2/27/2017 2:54:44 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38117A4b
 SDG #: K1700424
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 2/27/17
 Page: 1 of 1
 Reviewer: a
 2nd Reviewer: KR

METHOD: SPLP Metals (EPA SW 846 Method 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	
II.	Instrument Calibration	A	
III.	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	A	ICB/CCB only
V.	Field Blanks	—	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Serial Dilution	A	
IX.	Laboratory control samples	N	
X.	Field Duplicates	—	
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-022-110716R	K1700424-001	Soil	11/07/16
2	FTBL-IS-022-110716RMS	K1700424-001MS	Soil	11/07/16
3	FTBL-IS-022-110716RMSD	K1700424-001MSD	Soil	11/07/16
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Notes:

LDC #: 38117A4b

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 5 of 7

Reviewer: C

2nd reviewer: RTK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

Quality Control Outlier Reports

K1700612

Method Blank Outlier Report

Lab Reporting Batch ID: K1700612

Laboratory: ALS_K

EDD Filename: K1700612_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A				
Matrix: Soil				
Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1700939-01	1/31/2017 11:42:00 AM	ANTIMONY ZINC	0.010 mg/Kg 0.20 mg/Kg	FTBL-IS-178-011917 FTBL-IS-182-011917 FTBL-IS-193-011917 FTBL-IS-195-011917 FTBL-IS-196-011917 FTBL-IS-197-011917 FTBL-IS-200-011917

Project Name and Number: 06261038.0001.00400 - Clsoed Castner Firing Range

2/28/2017 8:28:10 AM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1700612

Laboratory: ALS_K

EDD Filename: K1700612_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-197-011917MS (Dry) FTBL-IS-197-011917MSD (Dry) (FTBL-IS-197-011917)	ANTIMONY	39	40	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 108%

Project Name and Number: 06261038.0001.00400 - Clsoed Castner Firing Range

2/27/2017 3:37:05 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38117B4a
 SDG #: K1700612
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 2/27/17
 Page: 1 of 1
 Reviewer: G
 2nd Reviewer: K

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	-	
VII.	Matrix Spike/Matrix Spike Duplicates	-	Not reviewed for ADR validation. Sb % Rout, no qual, PS in
VIII.	Duplicate sample analysis	-	Not reviewed for ADR validation.
IX.	Serial Dilution	A	
X.	Laboratory control samples	-	Not reviewed for ADR validation.
XI.	Field Duplicates	-	
XII.	Internal Standard (ICP-MS)	A	Not reviewed for ADR validation.
XIII.	Sample Result Verification	-	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	-	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-197-011917**	K1700612-001**	Soil	01/19/17
2	FTBL-IS-196-011917**	K1700612-002**	Soil	01/19/17
3	FTBL-IS-195-011917**	K1700612-003**	Soil	01/19/17
4	FTBL-IS-193-011917	K1700612-004	Soil	01/19/17
5	FTBL-IS-200-011917	K1700612-005	Soil	01/19/17
6	FTBL-IS-182-011917	K1700612-006	Soil	01/19/17
7	FTBL-IS-178-011917	K1700612-007	Soil	01/19/17
8	FTBL-IS-197-011917MS	K1700612-001MS	Soil	01/19/17
9	FTBL-IS-197-011917MSD	K1700612-001MSD	Soil	01/19/17
10				
11				
12				
13				

Notes:

LDC #: 38117 Bk

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: OR

2nd reviewer: KK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 38117B4a

VALIDATION FINDINGS WORKSHEET

PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dilution

2nd Reviewer:

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1-5

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (≥5x)									
Sb		0.05	0.125										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control Outlier Reports

K1700632

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1700632

Laboratory: ALS_K

EDD Filename: K1700632_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-194-012017-AMS (Dry) FTBL-IS-194-012017-AMSD (Dry) (FTBL-IS-194-012017-A)	ANTIMONY	36	36	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 108%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

2/27/2017 4:06:28 PM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1700632

Laboratory: ALS_K

EDD Filename: K1700632_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-194-012017-A	FTBL- IS-194-012017-B	FTBL- IS-194-012017-C			
ANTIMONY	0.239	0.315	0.265	14.15	20.00	No Qualifiers Applied
BERYLLIUM	0.894	0.891	0.892	0.17	20.00	
COPPER	20.4	16.8	19.7	10.06	20.00	
LEAD	39.9	36.9	40.3	4.76	20.00	
NICKEL	8.28	8.00	8.32	2.13	20.00	
ZINC	126	121	122	2.15	20.00	J(all detects)
ARSENIC	9.38	8.51	13.1	23.6	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

2/28/2017 8:00:35 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38117C4a
 SDG #: K1700632
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 2/27/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: KK

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	-	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (SB % Rout, PS=108, no qual)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet
 ND = No compounds detected
 R = Rinsate
 FB = Field blank
 D = Duplicate
 TB = Trip blank
 EB = Equipment blank
 SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-194-012017-A	K1700632-001	Soil	01/20/17
2	FTBL-IS-194-012017-B	K1700632-002	Soil	01/20/17
3	FTBL-IS-194-012017-C	K1700632-003	Soil	01/20/17
4	FTBL-IS-192-012017	K1700632-004	Soil	01/20/17
5	FTBL-IS-189-012017	K1700632-005	Soil	01/20/17
6	FTBL-IS-199-012017	K1700632-006	Soil	01/20/17
7	FTBL-IS-198-012017	K1700632-007	Soil	01/20/17
8	FTBL-IS-194-012017-AMS	K1700632-001MS	Soil	01/20/17
9	FTBL-IS-194-012017-AMSD	K1700632-001MSD	Soil	01/20/17
10				
11				
12				
13				

Notes:

LDC #: 38117Ck

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: OR

2nd reviewer: KR

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dilution

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (>5x)									
Sb		0.05	0.125										

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 2-7

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (>5x)									
Sb		0.04	0.1										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control Outlier Reports

K1700809

Method Blank Outlier Report

Lab Reporting Batch ID: K1700809

Laboratory: ALS_K

EDD Filename: K1700809_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1701094-01	2/6/2017 8:57:00 AM	ANTIMONY	0.021 mg/Kg	FTBL-IS-158-012617-A FTBL-IS-158-012617-B FTBL-IS-158-012617-C FTBL-IS-171-012617 FTBL-IS-173-012617 FTBL-IS-179-012617 FTBL-IS-180-012617 FTBL-IS-180-012617RE

Project Name and Number: 06261038.0001.00400 - Clsoed Castner Firing Range

2/28/2017 8:10:18 AM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1700809

Laboratory: ALS_K

EDD Filename: K1700809_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-158-012617-A	FTBL- IS-158-012617-B	FTBL- IS-158-012617-C			
ANTIMONY	0.158	0.161	0.177	6.18	20.00	No Qualifiers Applied
ARSENIC	5.98	6.71	5.68	8.65	20.00	
BERYLLIUM	1.23	1.40	1.12	11.29	20.00	
COPPER	14.1	14.4	13.3	4.08	20.00	
LEAD	19.5	20.2	19.0	3.08	20.00	
NICKEL	9.69	10.3	8.49	9.7	20.00	
ZINC	43.7	46.9	39.3	8.81	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Clsoed Castner Firing Range

2/28/2017 8:10:21 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38117D4a
 SDG #: K1700809
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 2/27/17
 Page: 1 of 1
 Reviewer: C
 2nd Reviewer: RKS

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	CS
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-180-012617	K1700809-001	Soil	01/26/17
2	FTBL-IS-179-012617	K1700809-002	Soil	01/26/17
3	FTBL-IS-173-012617	K1700809-003	Soil	01/26/17
4	FTBL-IS-158-012617-A	K1700809-004	Soil	01/26/17
5	FTBL-IS-158-012617-B	K1700809-005	Soil	01/26/17
6	FTBL-IS-158-012617-C	K1700809-006	Soil	01/26/17
7	FTBL-IS-171 - 012617	K1700809-007	Soil	01/26/17
8				
9				
10				
11				
12				
13				

Notes:

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: OR

2nd reviewer: KIS

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 38117D4a

VALIDATION FINDINGS WORKSHEET

PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

Reviewer: [Signature]2nd Reviewer: [Signature]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dilution

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1, 3-6

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (≥5x)									
Sb		0.02	0.05										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Quality Control Outlier Reports

K1700918

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1700918

Laboratory: ALS_K

EDD Filename: K1700918_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-168-012817MS (Dry) FTBL-IS-168-012817MSD (Dry) (FTBL-IS-168-012817)	ANTIMONY	39	39	72.00-124.00	-	ANTIMONY	No Qual, Sb not reported

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

2/28/2017 8:10:30 AM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1700918

Laboratory: ALS_K

EDD Filename: K1700918_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-165-012817-A	FTBL- IS-165-012817-B	FTBL- IS-165-012817-C			
ANTIMONY	0.242	0.265	0.292	9.4	20.00	No Qualifiers Applied
ARSENIC	9.56	9.86	9.84	1.72	20.00	
BERYLLIUM	1.26	1.33	1.32	2.9	20.00	
COPPER	18.7	20.2	19.0	4.11	20.00	
LEAD	27.9	28.4	26.9	2.75	20.00	
NICKEL	8.87	9.76	9.58	5	20.00	
ZINC	37.9	39.1	38.1	1.68	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

2/28/2017 8:11:50 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38117E4a
 SDG #: K1700918
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 2/27/17
 Page: 1 of 1
 Reviewer: C
 2nd Reviewer: KK

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	MS/D (5b ms/d %R out, no PS, qual J/UT)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	-	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-165-012817-A	K1700918-001	Soil	01/28/17
2	FTBL-IS-165-012817-B	K1700918-002	Soil	01/28/17
3	FTBL-IS-165-012817-C	K1700918-003	Soil	01/28/17
4	FTBL-IS-169-012817	K1700918-004	Soil	01/28/17
5	FTBL-IS-170-012817	K1700918-005	Soil	01/28/17
6	FTBL-IS-168-012817	K1700918-006	Soil	01/28/17
7	FTBL-IS-168-012817MS	K1700918-006MS	Soil	01/28/17
8	FTBL-IS-168-012817MSD	K1700918-006MSD	Soil	01/28/17
9				
10				
11				
12				
13				

Notes:

circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 38117E4a

VALIDATION FINDINGS WORKSHEET

PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

Reviewer: 2nd Reviewer: 

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dilution

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1-3

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (≥5x)									
Sb		0.02	0.05										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

Enclosure II

Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: February 28, 2017

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700612

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-197-011917	K1700612-001	Soil	01/19/17
FTBL-IS-196-011917	K1700612-002	Soil	01/19/17
FTBL-IS-195-011917	K1700612-003	Soil	01/19/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Arsenic, Beryllium, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Antimony Zinc	0.010 mg/Kg 0.20 mg/Kg	All samples in SDG K1700612
ICB/CCB	Antimony	0.05 ug/L	All samples in SDG K1700612

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. No data were qualified for Antimony percent recoveries (%R) outside QC limits for FTBL-IS-197-011917MS/MSD since the post spike sample (PS) was within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1700612

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1700612

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1700612

No Sample Data Qualified in this SDG

LDC #: 38117B4a
 SDG #: K1700612
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR IV

Date: 2/27/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	TGB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	Not reviewed for ADR validation.
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	Not reviewed for ADR validation.
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-197-011917**	K1700612-001**	Soil	01/19/17
2	FTBL-IS-196-011917**	K1700612-002**	Soil	01/19/17
3	FTBL-IS-195-011917**	K1700612-003**	Soil	01/19/17
4	FTBL-IS-193-011917	K1700612-004	Soil	01/19/17
5	FTBL-IS-200-011917	K1700612-005	Soil	01/19/17
6	FTBL-IS-182-011917	K1700612-006	Soil	01/19/17
7	FTBL-IS-178-011917	K1700612-007	Soil	01/19/17
8	FTBL-IS-197-011917MS	K1700612-001MS	Soil	01/19/17
9	FTBL-IS-197-011917MSD	K1700612-001MSD	Soil	01/19/17
10				
11				
12				
13				

Notes:

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Calibration				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients ≥ 0.995 ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Blanks				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm 2X$ RL ($\pm 2X$ RL for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			/	
Do all applicable analyses have duplicate injections? (Level IV only)			/	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			/	
Were analytical spike recoveries within the 85-115% QC limits?			/	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	/			
Were all percent differences (%Ds) < 10%?	/			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			/	
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/			
If the %Rs were outside the criteria, was a reanalysis performed?			/	
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
XV. Field blanks				
Field blanks were identified in this SDG.		/		
Target analytes were detected in the field blanks.			/	

LDC #: 38117 Bk

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: OR

2nd reviewer: KK

All circled elements are applicable to each sample.

[illegible]


Comments: Mercury by CVAA if performed

LDC #: 38117B4a

VALIDATION FINDINGS WORKSHEET

PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

Reviewer: 2nd Reviewer: 

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5x dilution

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: All

				Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (≥5x)									
Sb	0.010	0.05	0.125										
Zn	0.20		1										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y	N	N/A	Was a matrix spike analyzed for each matrix in this SDG?
---	---	-----	--

Y	N	N/A	Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y	N	N/A	Were all duplicate sample relative percent differences (RPD) $\leq 20\%$ for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

[illegible]

Comments:

LDC #: 38117134

VALIDATION FINDINGS WORKSHEET **Level IV Recalculation Worksheet**

Page: 1 of 1
 Reviewer: CR
 2nd Reviewer: KR

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation,
 Found = SSR (spiked sample result) - SR (sample result).
 True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
 D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
 SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
ICSA13	ICP interference check	As	26.91	25.0	105	105	Y
LCS	Laboratory control sample	Zn	84.2	93.5	90	90	
8	Matrix spike	Sb	(SSR-SR) 38.645	91.5	39	39	
8/9	Duplicate	Be	11.3	10.7	5	5	
1	ICP serial dilution	Zn	115	115	0	0	

Comments: _____

LDC #: 381734

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: 02
2nd Reviewer: KR

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
ICV ₍₁₁₋₁₉₎	ICP/MS (Initial calibration)	Cu	12.767	12.5	102	102	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV ₍₁₁₋₂₂₎	ICP/MS (Continuing calibration)	Ni	25.101	25.0	100	100	Y
	CVAA (Continuing calibration)						

Comments:

LDC #:

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Reviewer: OK

2nd reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y/N N/A Have results been reported and calculated correctly?

Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?

Y/N N/A Are all detection limits below the CRDL?

Detected analyte results for _____ were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(\text{RD})(\text{FV})(\text{Dil})}{(\text{In. Vol.})}$$

Recalculation:

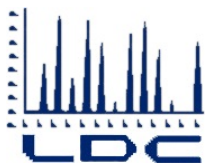
RD	=	Raw data concentration
FV	=	Final volume (ml)
ln. Vol.	=	Initial volume (ml) or weight (G)
Dil	=	Dilution factor

Recalculation:

$$S_b = \frac{100 \text{ mL} (5) (0.528 \mu\text{g/L})}{1.0485 \text{ g} (0.99) (1000)} = 0.2543 \text{ mg/g}$$

[illegible]

Note: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

March 30, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed is the final validation report for the fraction listed below. This SDG was received on February 27, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #38178:

SDG

Fraction:

K1700699
K1700745
K1700776

Metals, Explosives

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

hemist

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1700699, K1700745, and K1700776

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

March 29, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the January 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the EPA CLPNFG for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B
Metals by EPA SW 846 Method 6020A

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), laboratory blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), laboratory triplicate samples (TRP), standard reference materials (SRM), field duplicates and triplicates, and split samples. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, calibration blanks, interference check samples, serial dilutions, and split samples, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of two blanks for antimony and two blanks for several explosives. The associated sample results were qualified as non-detected (U) due to laboratory blank contamination as applicable. The sample results that were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank were not qualified. The details regarding the qualification of data are provided in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1700699/ 6020A	ICB/CCB	Antimony	0.021 ug/L	FTBL-IS-187-012317-A FTBL-IS-187-012317-B FTBL-IS-187-012317-C FTBL-IS-190-012317 FTBL-IS-186-012317

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks, therefore no data were qualified.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the exception of antimony in two MS/MSD pairs. No data were qualified for antimony MS/MSD %R outside QC limits when the post spike recovery was within QC limits.

IX. Triplicate Sample Analysis

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

X. Serial Dilution

Serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

XI. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

Standard reference materials (SRM) were analyzed for explosives. Percent recoveries (%R) were within QC limits.

XII. Field Duplicates/Field Triplicates/Split Samples

One field duplicate pair was collected and analyzed for metals. All RPDs were within QC limits. The field duplicate result comparisons are provided in Enclosure I.

One set of field triplicates was collected and analyzed for metals and explosives. All RSDs were within QC limits with the exception of several metals. The associated sample results were qualified as detected estimated (J). The field triplicate result comparisons are provided in Enclosure I.

Samples FTBL-SED-064-0-6-011817 and FTBL-SED-064-0-6-011817-QA (from SDG FA40657) were identified as split duplicate samples. No metals were detected in any of the split samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (≤50)	Flag	A or P
	FTBL-SED-064-0-6-011817 (SDG: K1700745)	FTBL-SED-064-0-6-011817-QA (SDG: FA40657)			
Arsenic	9.10	6.2	38	-	-

Analyte	Concentration (mg/Kg)		RPD (≤ 50)	Flag	A or P
	FTBL-SED-064-0-6-011817 (SDG: K1700745)	FTBL-SED-064-0-6-011817-QA (SDG: FA40657)			
Zinc	166	124	29	-	-

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1700699/ 8330B	FTBL-IS-191-012317	3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A
K1700776/ 8330B	FTBL-IS-157-012517	3-Nitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in these SDGs.

Due to field triplicate RSD, data were qualified as estimated in three samples.

Due to results not being confirmed, data were qualified as presumptive and estimated in two samples.

Due to laboratory blank contamination, data were qualified as non-detect in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
18-Jan-2017	FD-011817-1	K1700745-012	FD	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-060-0-6-011817	K1700745-001	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-060-0-6-011817MS	KQ1700836-03	MS	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-061-0-6-011817	K1700745-002	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-057-0-6-011817	K1700745-003	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-056-0-6-011817	K1700745-004	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-055-0-6-011817	K1700745-005	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-054-0-6-011817	K1700745-006	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-053-0-6-011817	K1700745-007	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-066-0-6-011817	K1700745-008	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-065-0-6-011817	K1700745-009	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-063-0-6-011817	K1700745-010	N	EPA 3050B	6020A	III
18-Jan-2017	FTBL-SED-064-0-6-011817	K1700745-011	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-187-012317-A	K1700699-001	FT	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-187-012317-AMS	K1700699-001MS	MS	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-187-012317-AMSD	K1700699-001SD	MSD	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-187-012317-B	K1700699-002	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-187-012317-C	K1700699-003	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-188-012317	K1700699-004	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-188-012317	K1700699-004	N	EPA 3535A	8330B	III
23-Jan-2017	FTBL-IS-188-012317MS	K1700699-004MS	MS	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-188-012317RE	K1700699-004RE	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-188-012317RE	K1700699-004RE	N	EPA 3535A	8330B	III
23-Jan-2017	FTBL-IS-188-012317MS	K1700699-004REMS	MS	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-188-012317MSD	K1700699-004RES	MSD	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-188-012317MSD	K1700699-004SD	MSD	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
23-Jan-2017	FTBL-IS-188-012317REP1	KWG1700911-1	REP	EPA 3535A	8330B	III
23-Jan-2017	FTBL-IS-188-012317REP3	KWG1700911-2	REP	EPA 3535A	8330B	III
23-Jan-2017	FTBL-IS-188-012317MS	KWG1700911-3	MS	EPA 3535A	8330B	III
23-Jan-2017	FTBL-IS-188-012317MSD	KWG1700911-4	MSD	EPA 3535A	8330B	III
23-Jan-2017	FTBL-IS-190-012317	K1700699-005	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-191-012317	K1700699-006	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-191-012317	K1700699-006	N	EPA 3535A	8330B	III
23-Jan-2017	FTBL-IS-191-012317RE	K1700699-006RE	N	EPA 3050B	6020A	III
23-Jan-2017	FTBL-IS-186-012317	K1700699-007	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-SED-068-0-6-012417	K1700745-013	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-SED-067-0-6-012417	K1700745-014	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-SED-058-0-6-012417	K1700745-015	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-SED-059-0-6-012417	K1700745-016	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-SED-062-0-6-012417	K1700745-017	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-176-012517	K1700776-001	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-183-012517	K1700776-002	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-183-012517RE	K1700776-002RE	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-184-012517	K1700776-003	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-184-012517RE	K1700776-003RE	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-185-012517	K1700776-004	N	EPA 3050B	6020A	IV
25-Jan-2017	FTBL-IS-185-012517RE	K1700776-004RE	N	EPA 3050B	6020A	IV
25-Jan-2017	FTBL-IS-157-012517	K1700776-005	N	EPA 3050B	6020A	IV
25-Jan-2017	FTBL-IS-157-012517	K1700776-005	N	EPA 3535A	8330B	IV
25-Jan-2017	FTBL-IS-157-012517RE	K1700776-005RE	N	EPA 3050B	6020A	IV
25-Jan-2017	FTBL-IS-156-012517	K1700776-006	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-156-012517RE	K1700776-006RE	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
25-Jan-2017	FTBL-IS-159-012517	K1700776-007	N	EPA 3050B	6020A	III
25-Jan-2017	FTBL-IS-159-012517RE	K1700776-007RE	N	EPA 3050B	6020A	III

Attachment 2

Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1700699, K1700745, K1700776

Laboratory: ALS_K

EDD Filename: K1700699.01_SEDD2A_rev,
K1700745_SEDD2A_rev, K1700776_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1700699

Method Category: METALS

Method: 6020A

Matrix: Soil

1/23/2017									
Sample ID: FTBL-IS-187-012317-A		Collected: AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.725	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft
LEAD	80.2	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

1/23/2017									
Sample ID: FTBL-IS-187-012317-B		Collected: AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.419	J	0.025	LOD	0.050	LOQ	mg/Kg	J	Ft
LEAD	67.4	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

1/23/2017									
Sample ID: FTBL-IS-187-012317-C		Collected: AM		Analysis Type: Initial				Dilution: 5.0	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.762	J	0.025	LOD	0.049	LOQ	mg/Kg	J	Ft
LEAD	138	=	0.05	LOD	0.05	LOQ	mg/Kg	J	Ft

Method Category: SVOA

Method: 8330B

Matrix: Soil

1/23/2017									
Sample ID: FTBL-IS-191-012317		Collected: PM		Analysis Type: Initial2				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.020	JN	0.041	LOD	0.082	LOQ	mg/Kg	U	Mb, ProfJudg

SDG: K1700776

Method Category: SVOA

Method: 8330B

Matrix: Soil

1/25/2017									
Sample ID: FTBL-IS-157-012517		Collected: PM		Analysis Type: Initial				Dilution: 1	
Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
3-NITROTOLUENE	0.027	JN	0.041	LOD	0.081	LOQ	mg/Kg	U	Mb, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/28/2017 3:58:26 PM

ADR version 1.9.0.325

Page 1 of 2

Data Qualifier Summary

Lab Reporting Batch ID: K1700699, K1700745, K1700776

Laboratory: ALS_K

EDD Filename: K1700699.01_SEDD2A_rev,
K1700745_SEDD2A_rev, K1700776_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Ft	Field Triplicate Precision
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/28/2017 3:58:26 PM

ADR version 1.9.0.325

Page 2 of 2

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1700699

Method Blank Outlier Report

Lab Reporting Batch ID: K1700699

Laboratory: ALS_K

EDD Filename: K1700699.01_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1701038-03RE	2/6/2017 7:11:00 AM	ANTIMONY	0.011 mg/Kg	FTBL-IS-188-012317 FTBL-IS-188-012317RE FTBL-IS-191-012317 FTBL-IS-191-012317RE
KQ1701094-01	2/6/2017 8:57:00 AM	ANTIMONY	0.021 mg/Kg	FTBL-IS-186-012317 FTBL-IS-187-012317-A FTBL-IS-187-012317-B FTBL-IS-187-012317-C FTBL-IS-190-012317

Method: 8330B
Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1700911-8	2/10/2017 12:52:00 PM	1,3-DINITROBENZENE 3-NITROTOLUENE	0.013 mg/Kg 0.023 mg/Kg	FTBL-IS-188-012317 FTBL-IS-188-012317RE FTBL-IS-191-012317

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-191-012317(Initial2)	3-NITROTOLUENE	0.020 mg/Kg	0.020U mg/Kg

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/10/2017 12:48:57 PM

ADR version 1.9.0.325

Page 1 of 1

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: K1700699

Laboratory: ALS_K

EDD Filename: K1700699.01_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
FTBL-IS-188-012317MS (Dry) FTBL-IS-188-012317MSD (Dry) (FTBL-IS-188-012317)	ANTIMONY	35	36	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 100%
FTBL-IS-187-012317-AMS (Dry) FTBL-IS-187-012317-AMSD (Dry) (FTBL-IS-187-012317-A)	ANTIMONY	31	32	72.00-124.00	-	ANTIMONY	No Qual, Post Spike = 103%

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

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ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1700699

Laboratory: ALS_K

EDD Filename: K1700699.01_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-187-012317-A	FTBL- IS-187-012317-B	FTBL- IS-187-012317-C			
ARSENIC	5.70	6.11	5.98	3.53	20.00	No Qualifiers Applied
BERYLLIUM	1.02	1.05	1.08	2.86	20.00	
COPPER	22.1	21.7	24.4	6.41	20.00	
NICKEL	10.1	9.89	10.0	1.05	20.00	
ZINC	63.5	60.0	65.0	4.08	20.00	
ANTIMONY	0.725	0.419	0.762	29.63	20.00	J(all detects)
LEAD	80.2	67.4	138	39.51	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/10/2017 12:49:02 PM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1700699

Laboratory: ALS_K

EDD Filename: K1700699.01_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-191-012317	3-NITROTOLUENE	JN	0.020	0.082	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/10/2017 12:49:00 PM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38178A4a
 SDG #: K1700699
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/3/17
 Page: 1 of 1
 Reviewer: *AK*
 2nd Reviewer: *KK*

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / NA	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only PBN: t
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	8/9, 10/11 Sb ms/p out, Ps in, no qual
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	-	
XII.	Internal Standard (ICP-MS)	NA	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-187-012317-A	K1700699-001	Soil	11/23/17
2	FTBL-IS-187-012317-B	K1700699-002	Soil	11/23/17
3	FTBL-IS-187-012317-C	K1700699-003	Soil	11/23/17
4	FTBL-IS-188-012317-A	K1700699-004	Soil	11/23/17
5	FTBL-IS-190-012317-A	K1700699-005	Soil	11/23/17
6	FTBL-IS-191-012317-A	K1700699-006	Soil	11/23/17
7	FTBL-IS-186-012317-A	K1700699-007	Soil	11/23/17
8	FTBL-IS-187-012317-AMS	K1700699-001MS	Soil	11/23/17
9	FTBL-IS-187-012317-AMSD	K1700699-001MSD	Soil	11/23/17
10	FTBL-IS-188-012317-AMS	K1700699-004MS	Soil	11/23/17
11	FTBL-IS-188-012317-AMSD	K1700699-004MSD	Soil	11/23/17
12				
13				

Notes:

LDC #: 38178A4a

VALIDATION FINDINGS WORKSHEET

PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5xdil

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 1-3, 5, 7

				Sample Identification									
Analyte	Maximum PB ^a (µg/l)	Maximum ICB/CCB ^a (µg/l)	Action Level	No qualifiers (≥5x)									
Sb		0.021	0.0525										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 38178A40
 SDG #: K1700699
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/6/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	FSO ≤ 1570. ICV ≤ 20/0
III.	Continuing calibration	A	CCV ≤ 20/0
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates / TRP	N/A	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	2N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-188-012317-X	K1700699-004	Soil	11/23/17
2	FTBL-IS-191-012317-X	K1700699-006	Soil	11/23/17
3	FTBL-IS-188-012317-AMS	K1700699-004MS	Soil	11/23/17
4	FTBL-IS-188-012317-AMSD	K1700699-004MSD	Soil	11/23/17
5	FTBL-IS-188-012317-ADUP	K1700699-004DUP	Soil	11/23/17
6	FTBL-IS-188-012317-ATRP	K1700699-004TRP	Soil	11/23/17
7				
8				
9				
10				
11				

Notes:

LDC #: 38178A40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: 

2nd Reviewer: KK

METHOD: GC ☒ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A) Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y(N)N/A	Did the relative percent differences of detected compounds between two columns/detectors $\leq 40\%$?
---------	--

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Quality Control Outlier Reports

K1700745

Field Duplicate RPD Report

Lab Reporting Batch ID: K1700745

Laboratory: ALS_K

EDD Filename: K1700745_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	FTBL- SED-064-0-6-011817	FD-011817-1 (Dry)			
ARSENIC	9.10	7.03	26	50.00	No Qualifiers Applied
ZINC	166	110	41	50.00	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/8/2017 9:47:58 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38178B4a
SDG #: K1700745
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/13/17
Page: 1 of 2
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	N	LCS
XI.	Field Duplicates	SW	split = 1 lb + FTBL-SED-064-0-6-011817-QA (from FAH0657)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-SED-060-0-6-011817	K1700745-001	Sediment	01/18/17
2	FTBL-SED-061-0-6-011817	K1700745-002	Sediment	01/18/17
3	FTBL-SED-057-0-6-011817	K1700745-003	Sediment	01/18/17
4	FTBL-SED-056-0-6-011817	K1700745-004	Sediment	01/18/17
5	FTBL-SED-055-0-6-011817	K1700745-005	Sediment	01/18/17
6	FTBL-SED-054-0-6-011817	K1700745-006	Sediment	01/18/17
7	FTBL-SED-053-0-6-011817	K1700745-007	Sediment	01/18/17
8	FTBL-SED-066-0-6-011817	K1700745-008	Sediment	01/18/17
9	FTBL-SED-065-0-6-011817	K1700745-009	Sediment	01/18/17
10	FTBL-SED-063-0-6-011817	K1700745-010	Sediment	01/18/17
11	FTBL-SED-064-0-6-011817	K1700745-011	Sediment	01/18/17
12	FD-011817-1	K1700745-012	Sediment	01/18/17
13	FTBL-SED-068-0-6-012417	K1700745-013	Sediment	01/24/17
14	FTBL-SED-067-0-6-012417	K1700745-014	Sediment	01/24/17
15	FTBL-SED-058-0-6-012417	K1700745-015	Sediment	01/24/17

LDC #: 38178B4a

VALIDATION COMPLETENESS WORKSHEET

SDG #: K1700745

ADR

Laboratory: ALS Environmental

Date: 3/3/17

Page: 2 of 2

Reviewer: KK

2nd Reviewer: KK

METHOD: Metals (EPA SW 846 Method 6020A)

	Client ID	Lab ID	Matrix	Date
16	FTBL-SED-059-0-6-012417	K1700745-016	Sediment	01/24/17
17	FTBL-SED-062-0-6-012417	K1700745-017	Sediment	01/24/17
18	FTBL-SED-060-0-6-011817MS	K1700745-001MS	Sediment	01/18/17
19	FTBL-SED-060-0-6-011817MSD	K1700745-001MSD	Sediment	01/18/17
20				
21				
22				
23				
24				

Notes:

LDC #: 5811859a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: 9

2nd reviewer: AK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC#: 38178B4a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: GRK
2nd Reviewer: GRK

METHOD: Metals (EPA Method 6010B/7000)

Analyte	Concentration (mg/Kg)		RPD (≤50)	
	11	FTBL-SED-064-0-6-011817- QA		
Arsenic	9.10	6.2	38	
Zinc	166	124	29	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\38178B4a.wpd

Quality Control Outlier Reports

K1700776

Method Blank Outlier Report

Lab Reporting Batch ID: K1700776

Laboratory: ALS_K

EDD Filename: K1700776_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_170316

Method:	6020A
Matrix:	Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1701038-03RE	2/6/2017 7:11:00 AM	ANTIMONY	0.011 mg/Kg	FTBL-IS-156-012517 FTBL-IS-156-012517RE FTBL-IS-157-012517 FTBL-IS-157-012517RE FTBL-IS-159-012517 FTBL-IS-159-012517RE FTBL-IS-176-012517 FTBL-IS-183-012517 FTBL-IS-183-012517RE FTBL-IS-184-012517 FTBL-IS-184-012517RE FTBL-IS-185-012517 FTBL-IS-185-012517RE

Method:	8330B
Matrix:	Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1700911-7	2/7/2017 7:00:00 PM	1,3-DINITROBENZENE 3-NITROTOLUENE	0.11 mg/Kg 1.4 mg/Kg	FTBL-IS-157-012517
KWG1700911-7RE	2/10/2017 12:15:00 PM	1,3-DINITROBENZENE 3-NITROTOLUENE	0.082 mg/Kg 0.046 mg/Kg	FTBL-IS-157-012517

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
FTBL-IS-157-012517(Initial)	3-NITROTOLUENE	0.027 mg/Kg	0.027U mg/Kg

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/28/2017 10:22:06 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1700776

Laboratory: ALS_K

EDD Filename: K1700776_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_170316

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-157-012517	3-NITROTOLUENE	JN	0.027	0.081	LOQ	mg/Kg	J (all detects)

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/28/2017 10:22:09 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38178C4a
 SDG #: K1700776
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 3/31/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /N	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	—	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. (from K1700699)
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	Not reviewed for ADR validation.
XI.	Field Duplicates	—	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	—	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-176-012517	K1700776-001	Soil	01/25/17
2	FTBL-IS-183-012517	K1700776-002	Soil	01/25/17
3	FTBL-IS-184-012517	K1700776-003	Soil	01/25/17
4	FTBL-IS-185-012517**	K1700776-004**	Soil	01/25/17
5	FTBL-IS-157-012517**	K1700776-005**	Soil	01/25/17
6	FTBL-IS-156-012517	K1700776-006	Soil	01/25/17
7	FTBL-IS-159-012517	K1700776-007	Soil	01/25/17
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 38178C40
 SDG #: K1700776
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/6/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	
III.	Continuing calibration	A	
IV.	Laboratory Blanks	N	Not reviewed for ADR validation.
V.	Field blanks	N	
VI.	Surrogate spikes	N	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation.
VIII.	Laboratory control samples	N	Not reviewed for ADR validation.
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	[Signature]	Not reviewed for ADR validation.
XI.	Target compound identification	N	Not reviewed for ADR validation.
XII.	Overall assessment of data	N	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-176-012517	K1700776-001	Soil	01/25/17
2	FTBL-IS-183-012517	K1700776-002	Soil	01/25/17
3	FTBL-IS-184-012517	K1700776-003	Soil	01/25/17
4	FTBL-IS-185-012517**	K1700776-004**	Soil	01/25/17
5	FTBL-IS-157-012517**	K1700776-005**	Soil	01/25/17
6	FTBL-IS-156-012517	K1700776-006	Soil	01/25/17
7	FTBL-IS-159-012517	K1700776-007	Soil	01/25/17
8				
9				
10				
11				

Notes:

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y	N	N/A	Did the reported results for detected target compounds agree within 10.0% of the recalculated results?
---	---	-----	--

Y	N	N/A	Did the relative percent differences of detected compounds between two columns/detectors <40%?
---	---	-----	--

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Enclosure II
Level IV Data Validation Reports

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: March 29, 2017

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700776

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-185-012517	K1700776-004	Soil	01/25/17
FTBL-IS-157-012517	K1700776-005	Soil	01/25/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Arsenic, Beryllium, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Antimony	0.011 mg/Kg	All samples in SDG K1700776

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1700776

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1700776

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1700776

No Sample Data Qualified in this SDG

LDC #: 38178C4a
 SDG #: K1700776
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 3/3/17
 Page: 1 of 1
 Reviewer: *al*
 2nd Reviewer: *KK*

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/ECB only.
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	A	Not reviewed for ADR validation. MS/D (SDG: K1700699)
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-176-012517	K1700776-001	Soil	01/25/17
2	FTBL-IS-183-012517	K1700776-002	Soil	01/25/17
3	FTBL-IS-184-012517	K1700776-003	Soil	01/25/17
4	FTBL-IS-185-012517**	K1700776-004**	Soil	01/25/17
5	FTBL-IS-157-012517**	K1700776-005**	Soil	01/25/17
6	FTBL-IS-156-012517	K1700776-006	Soil	01/25/17
7	FTBL-IS-159-012517	K1700776-007	Soil	01/25/17
8				
9				
10				
11				
12				
13				

Notes:

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	/			
Were %RSD of isotopes in the tuning solution $\leq 5\%$?	/			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	/			
Were all initial calibration correlation coefficients ≥ 0.995 ?	/			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	/			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	/			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	/			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	/			
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm 2X$ RL for soil was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.	/			
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			/	
Do all applicable analyses have duplicate injections? (Level IV only)			/	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			/	
Were analytical spike recoveries within the 85-115% QC limits?			/	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	/			
Were all percent differences (%Ds) < 10%?	/			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			/	
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/			
If the %Rs were outside the criteria, was a reanalysis performed?			/	
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
XV. Field blanks				
Field blanks were identified in this SDG.		/		
Target analytes were detected in the field blanks.			/	

LDC #

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Reviewer: OR

2nd reviewer: KK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5xdil

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: All

				Sample Identification									
Analyte	Maximum PB ^a (mg/Kg)	Maximum ICB/CCB ^a (µg/l)	Action Level	No qualifiers (≥5x)									
Sb	0.011		0.055										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 381804

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: 02
2nd Reviewer: KK

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration) 09:36	Pb	25.217	25.0	101	101	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV2	ICP/MS (Continuing calibration) 10:43	Ni	24.6	25.0	98	98	Y
	CVAA (Continuing calibration)						

Comments:

LDC #: 38178C4**VALIDATION FINDINGS WORKSHEET**
Level IV Recalculation WorksheetPage: 1 of 1
Reviewer: CR
2nd Reviewer: KK**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation,
Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
ICSAB	ICP interference check D-06	Zn	22.309	25.0	89	89	Y
LES	Laboratory control sample 10-3	As	996	1000	100	100	Y
N	Matrix spike		(SSR-SR)				
N	Duplicate						
N	ICP serial dilution						

Comments: _____

LDC #:

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Reviewer:

2nd reviewer: K/K

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?

Y	N	N/A	Are results within the calibrated range of the instruments and within the linear range of the ICP?
---	---	-----	--

Y/N	N/A	Are all detection limits below the CRDL?

Detected analyte results for 55 were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(\text{RD})(\text{FV})(\text{Dil})}{(\text{In. Vol.})}$$

Recalculation:

RD	=	Raw data concentration
FV	=	Final volume (ml)
In. Vol.	=	Initial volume (ml) or weight (G)
Dil	=	Dilution factor

$$4 = \frac{100 \text{ mL}(5)(1.927 \text{ g/L})}{0.991(1.02 \text{ g})(1000)} = 0.953 \text{ mg/kg}$$

[illegible]

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: March 29, 2017

Parameters: Explosives

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700776

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-157-012517	K1700776-005	Soil	01/25/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (October 1999). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

Retention time windows were established as required by the method.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG1700911-17 (grinding blank)	02/02/17	1,3-Dinitrobenzene 3-Nitrotoluene	0.082 mg/Kg 0.046 mg/Kg	All samples in SDG K1700776

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
FTBL-IS-157-012517	3-Nitrotoluene	0.027 mg/Kg	0.041U mg/Kg

V. Field Blanks

No field blanks were identified in this SDG.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples/Standard Reference Materials

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
FTBL-IS-157-012517	3-Nitrotoluene	2nd column confirmation was not performed for this compound.	This compound must be confirmed on the 2nd column per the method.	NJ (all detects)	A

XI. Target Compound Identifications

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to results not being confirmed, data were qualified as presumptive and estimated in one sample.

Due to grinding blank contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Explosives - Data Qualification Summary - SDG K1700776

Sample	Compound	Flag	A or P	Reason
FTBL-IS-157-012517	3-Nitrotoluene	NJ (all detects)	A	Compound quantitation (no confirmation)

Fort Bliss, Castner Range
Explosives - Laboratory Blank Data Qualification Summary - SDG K1700776

Sample	Compound	Modified Final Concentration	A or P
FTBL-IS-157-012517	3-Nitrotoluene	0.041U mg/Kg	A

Fort Bliss, Castner Range
Explosives - Field Blank Data Qualification Summary - SDG K1700776

No Sample Data Qualified in this SDG

LDC #: 38178C40
 SDG #: K1700776
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR/IV

Date: 3/6/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A A	RSD ≤ 15%. ICV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	W	Not reviewed for ADR validation. grinding B/c
V.	Field blanks	N	
VI.	Surrogate spikes	A	Not reviewed for ADR validation.
VII.	Matrix spike/Matrix spike duplicates	N	Not reviewed for ADR validation. CS
VIII.	Laboratory control samples	A	Not reviewed for ADR validation. LCS. SRM.
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	W	Not reviewed for ADR validation.
XI.	Target compound identification	A	Not reviewed for ADR validation.
XII.	Overall assessment of data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-176-012517	K1700776-001	Soil	01/25/17
2	FTBL-IS-183-012517	K1700776-002	Soil	01/25/17
3	FTBL-IS-184-012517	K1700776-003	Soil	01/25/17
4	FTBL-IS-185-012517**	K1700776-004**	Soil	01/25/17
5	FTBL-IS-157-012517**	K1700776-005**	Soil	01/25/17
6	FTBL-IS-156-012517	K1700776-006	Soil	01/25/17
7	FTBL-IS-159-012517	K1700776-007	Soil	01/25/17
8				
9				
10				
11				

Notes:

Method: GC / HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was cooler temperature criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) <u>15</u> $\leq 20\%$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the RT windows properly established?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $< 20\%$ or percent recoveries (%R) 80-120%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all the retention times within the acceptance windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a laboratory blank analyzed for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
V. Field Blanks				
Were field blanks identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field blanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were target compounds detected in the field duplicates?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O.		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

VALIDATION FINDINGS WORKSHEET

BlanksMETHOD: GC/HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

☒ Y ☐ N ☐ N/A

Were all samples associated with a given method blank?

☒ Y ☐ N ☐ N/A

Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?

☒ Y ☐ N ☐ N/A

Was a method blank performed with each extraction batch?

☒ Y ☐ N ☐ N/A

Were any contaminants found in the method blanks? If yes, please see findings below.

Blank extraction date: 2/2/17 Blank analysis date: 2/10/17Conc. units: MS/KgAssociated samples: all

Compound	Blank ID	Sample Identification							
Findings Storage Bk <u>KW</u>	<u>1700911-17</u>	<u>5</u>							
<u>D</u>	<u>0.082</u>								
<u>M</u>	<u>0.046</u>	<u>0.027</u>							
		<u>0.041 U</u>							

Blank extraction date: _____ Blank analysis date: _____

Associated samples: _____

Conc. units: _____

Compound	Blank ID	Sample Identification							

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

All contaminants within five times the method blank concentration were qualified as not detected, "U".

Reviewer:

2nd Reviewer: KIR

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	
			Did the relative percent differences of detected compounds between two columns/detectors <40%?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

LDC #: 38178C40

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

Page: 1 of 1Reviewer: Q2nd Reviewer: KKMETHOD: GC _____ HPLC ✓

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = 100 * (S/X)

A = Area of compound,

C = Concentration of compound,

S = Standard deviation of the CF

X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (1000 std)	CF (1000 std)	Average CF (initial)	Average CF (initial)	%RSD	%RSD
1	1CXL	12/7/16	HMX 3-Nitrotoluene	11900 20300	11950 20277	12000 20100	11950 20140	1.7 1.8	1.8 1.9
2	10A	12/7/16	Nitroglycerin	21500	21518	20800	20838	7.2	7.3
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 3818c40

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

Page: 1 of 1Reviewer: Q2nd Reviewer: KKMETHOD: GC _____ HPLC ✓

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$
 CF = A/C

Where: ave. CF = initial calibration average CF
 CF = continuing calibration CF
 A = Area of compound
 C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(lcal)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/Conc. CCV	CF/Conc. CCV	%D	%D
1	020T000103	2/7/17	Nitroglycerin	20800	20900	20927	0	0.6
			HMX	12000	11600	11609	3	3.2
			3-Nitrophenol	20100	19100	19115	5	4.9
2	020T000117	2/8/17	↓	20800	21200	21197	2	1.9
				12000	11600	11633	3	3.1
				20100	19400	19377	4	3.6
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 38118C40VALIDATION FINDINGS WORKSHEET
Surrogate Results VerificationPage: 1 of 1Reviewer: [Signature]2nd reviewer: [Signature]METHOD: GC ☒ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: $SF/SS \times 100$ Where: SF = Surrogate Found
SS = Surrogate SpikedSample ID: 5

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
<u>1-chloro-3-nitrobenzene</u>		<u>5000⁰</u>	<u>4539</u>	<u>91</u>	<u>91</u>	<u>0</u>

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

VALIDATION FINDINGS WORKSHEET Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

METHOD: GC / HPLC

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration

SC = Concentration

SA = Spike added

RPD = |SSCLCS - SSCLCSD| * 2 / (SSCLCS + SSCLCSD)

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: KN&1700911-5

Compound	Spike Added (Mg/L)		Spiked Sample Concentration (Mg/L)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)	1.98	NA	1.64	NA	83	83				
2,4,6-Trinitrotoluene (8330)	✓	✓	1.67	✓	84	84				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 38178c40VALIDATION FINDINGS WORKSHEET
Sample Calculation VerificationPage: 1 of 1
Reviewer: Q
2nd Reviewer: KKMETHOD: GC / HPLCY / N / N/A
Y / N / N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration = $\frac{(A)(F_v)(D_f)}{(RF)(V_s \text{ or } W_s)(\%S/100)}$

Example:

Sample ID. 5 Compound Name 3-Nitrotoluene

A= Area or height of the compound to be measured

Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound
In the initial calibration

Vs= Initial volume of the sample

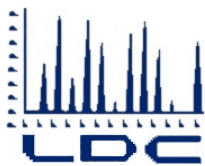
Ws= Initial weight of the sample

%S= Percent Solid

Concentration = $\frac{(670012)(8)(1)}{(20100)(10.0328)(0.985)(1000)}$ $= 0.027 \text{ mg/kg}$

#	Sample ID	Compound	Reported Concentrations (<u>mg/kg</u>)	Recalculated Results Concentrations ()	Qualifications
	<u>5</u>	<u>3</u>	<u>0.027</u>		

Comments: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

March 17, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on March 3, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #38200:

SDG #

Fraction:

K1700744, K1701849 Explosives, Metals, Perchlorate

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Project Manager/Senior Chemist

L:\Arcadis\Fort Bliss-Castner Range\38200ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1700744 and K1700849

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

March 15, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the January 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the EPA CLPNFG for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

Metals by EPA SW 846 Method 6020A

Perchlorate by EPA SW 846 Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), laboratory blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), internal standards, and field triplicates. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, calibration blanks, interference check samples, and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of two blanks for antimony and two blanks for explosives. The sample results were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank, therefore no data were qualified. The details are presented in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1700744/ 6020A	ICB/CCB	Antimony	0.021 ug/L	FTBL-IS-175-012417-A FTBL-IS-175-012417-B FTBL-IS-175-012417-C

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no laboratory duplicate (DUP) or laboratory triplicate (TRP) analyses specified for the samples in these SDGs, and therefore laboratory duplicate/triplicate analyses were not performed for these SDGs.

X. Serial Dilution

Serial dilution was not performed for these SDGs.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field Triplicates

One set of field triplicates were collected and analyzed for metals. All relative standard deviations (RSD)s were within QC limits. The field triplicate result comparisons are provided in Enclosure I.

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1700849/ 8330B	FTBL-IS-166-012717	Nitrobenzene 2,4-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to results not being confirmed, data were qualified as presumptive in one sample.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-Jan-2017	FTBL-IS-174-012417	K1700744-001	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-174-012417	K1700744-001	N	EPA 3535A	8330B	III
24-Jan-2017	FTBL-IS-174-012417	K1700744-001	N	METHOD	6850	III
24-Jan-2017	FTBL-IS-174-012417RE	K1700744-001RE	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-174-012417MS	KQ1701598-03	MS	METHOD	6850	III
24-Jan-2017	FTBL-IS-174-012417MSD	KQ1701598-04	MSD	METHOD	6850	III
24-Jan-2017	FTBL-IS-175-012417-A	K1700744-002	FT	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-175-012417-B	K1700744-003	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-175-012417-C	K1700744-004	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-172-012417	K1700744-005	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-181-012417	K1700744-006	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-177-012417	K1700744-007	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-167-012717	K1700849-001	N	EPA 3050B	6020A	IV
27-Jan-2017	FTBL-IS-166-012717	K1700849-002	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-166-012717	K1700849-002	N	EPA 3535A	8330B	III
27-Jan-2017	FTBL-IS-164-012717	K1700849-003	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-160-012717	K1700849-004	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-162-012717	K1700849-005	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-161-012717	K1700849-006	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-163-012717	K1700849-007	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1700744, K1700849

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A, K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1700849

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-166-012717
1/27/2017 9:55:00
Collected: AM
Analysis Type: Initial2
Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.0092	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
2,4-DINITROTOLUENE	0.072	JN	0.081	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:44:25 AM

ADR version 1.9.0.325

Page 1 of 2

Data Qualifier Summary

Lab Reporting Batch ID: K1700744, K1700849

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A, K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Mb	Method Blank Contamination
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:44:25 AM

ADR version 1.9.0.325

Page 2 of 2

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1700744

Method Blank Outlier Report

Lab Reporting Batch ID: K1700744

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1701038-03RE	2/6/2017 7:11:00 AM	ANTIMONY	0.011 mg/Kg	FTBL-IS-174-012417 FTBL-IS-174-012417RE
KQ1701094-01	2/6/2017 8:57:00 AM	ANTIMONY	0.021 mg/Kg	FTBL-IS-172-012417 FTBL-IS-175-012417-A FTBL-IS-175-012417-B FTBL-IS-175-012417-C FTBL-IS-177-012417 FTBL-IS-181-012417

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1700911-8	2/10/2017 12:52:00 PM	1,3-DINITROBENZENE 3-NITROTOLUENE	0.013 mg/Kg 0.023 mg/Kg	FTBL-IS-174-012417

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:35:54 AM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1700744

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-175-012417-A	FTBL- IS-175-012417-B	FTBL- IS-175-012417-C			
ANTIMONY	0.224	0.200	0.213	5.66	20.00	No Qualifiers Applied
ARSENIC	5.14	7.04	5.07	19.44	20.00	
BERYLLIUM	1.96	1.89	1.74	6.03	20.00	
COPPER	14.5	11.9	13.7	9.96	20.00	
LEAD	32.5	30.3	31.2	3.53	20.00	
NICKEL	5.37	4.81	5.73	8.74	20.00	
ZINC	69.3	63.8	62.6	5.48	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/15/2017 10:51:56 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38200A4a
 SDG #: K1700744
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/13/17
 Page: 1 of 1
 Reviewer: KK
 2nd Reviewer: CR

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	(from K1700699)
VIII.	Duplicate sample analysis	N	Reax
IX.	Serial Dilution	AN	
X.	Laboratory control samples	N	
XI.	Field Duplicates / Triplicate	-	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-174-012417	K1700744-001	Soil	01/24/17
2	FTBL-IS-175-012417-A	K1700744-002	Soil	01/24/17
3	FTBL-IS-175-012417-B	K1700744-003	Soil	01/24/17
4	FTBL-IS-175-012417-C	K1700744-004	Soil	01/24/17
5	FTBL-IS-172-012417	K1700744-005	Soil	01/24/17
6	FTBL-IS-181-012417	K1700744-006	Soil	01/24/17
7	FTBL-IS-177-012417	K1700744-007	Soil	01/24/17
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 38200 A

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: KK

2nd reviewer: CS

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 38200A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

Reviewer: KK

2nd Reviewer: **METHOD:** Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5xdil

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 2 -4

				Sample Identification									
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (≥5x)									
Sb		0.021	0.0525										

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 38200A40
 SDG #: K1700744
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/10/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	1570 - 1CV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-174-012417	K1700744-001	Soil	01/24/17
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Notes:

LDC #: 38200A87
 SDG #: K1700744
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR

Date: 3/19/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	#1 = 29 day (HT = 28 day) = 9
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	A, A	2SD ≤ 1570 ICV ≤ 1570
IV.	Continuing calibration	A	CCV ≤ 1570
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-174-012417	K1700744-001	Soil	01/24/17
2	FTBL-IS-174-012417MS	K1700744-001MS	Soil	01/24/17
3	FTBL-IS-174-012417MSD	K1700744-001MSD	Soil	01/24/17
4				
5				
6				
7				
8				

Notes:

Quality Control Outlier Reports

K1700849

Method Blank Outlier Report

Lab Reporting Batch ID: K1700849

Laboratory: ALS_K

EDD Filename: K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1700911-9	2/10/2017 1:29:00 PM	1,3-DINITROBENZENE 3-NITROTOLUENE HMX	0.071 mg/Kg 0.032 mg/Kg 0.23 mg/Kg	FTBL-IS-166-012717

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:36:03 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1700849

Laboratory: ALS_K

EDD Filename: K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-166-012717	2,4-DINITROTOLUENE NITROBENZENE	JN	0.072	0.081	LOQ	mg/Kg	J (all detects)
		JN	0.0092	0.081	LOQ	mg/Kg	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:36:05 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38200B4a
 SDG #: K1700849
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 3/14/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. CS
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-167-012717**	K1700849-001**	Soil	01/27/17
2	FTBL-IS-166-012717	K1700849-002	Soil	01/27/17
3	FTBL-IS-164-012717	K1700849-003	Soil	01/27/17
4	FTBL-IS-160-012717	K1700849-004	Soil	01/27/17
5	FTBL-IS-162-012717	K1700849-005	Soil	01/27/17
6	FTBL-IS-161-012717	K1700849-006	Soil	01/27/17
7	FTBL-IS-163-012717	K1700849-007	Soil	01/27/17
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 38200342

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Reviewer: OR

2nd reviewer: LRK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 38200B40
 SDG #: K1700849
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/10/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: KR

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	RSD ≤ 15%. 1 CV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SN	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-166-012717	K1700849-002	Soil	01/27/17
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O.		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 38200B40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer:

2nd Reviewer: KK

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y	N	N/A	Did the reported results for detected target compounds agree within 10.0% of the recalculated results?
---	---	-----	--

Y	N	N/A	Did the relative percent differences of detected compounds between two columns/detectors $\leq 40\%$?

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Enclosure II
Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: March 15, 2017

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700849

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-167-012717	K1700849-001	Soil	01/27/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Arsenic, Beryllium, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1700849

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1700849

No Sample Data Qualified in this SDG

Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1700849

No Sample Data Qualified in this SDG

LDC #: 38200B4a
SDG #: K1700849
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 3/14/17
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. CS
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-167-012717**	K1700849-001**	Soil	01/27/17
2	FTBL-IS-166-012717	K1700849-002	Soil	01/27/17
3	FTBL-IS-164-012717	K1700849-003	Soil	01/27/17
4	FTBL-IS-160-012717	K1700849-004	Soil	01/27/17
5	FTBL-IS-162-012717	K1700849-005	Soil	01/27/17
6	FTBL-IS-161-012717	K1700849-006	Soil	01/27/17
7	FTBL-IS-163-012717	K1700849-007	Soil	01/27/17
8				
9				
10				
11				
12				
13				

Notes:

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	/			
Were %RSD of isotopes in the tuning solution $\leq 5\%$?				
III. Calibration				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	/			
Were all initial calibration correlation coefficients ≥ 0.995 ?	/			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	/			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?				
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.			/	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			/	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm 2X$ RL ($\pm 2X$ RL for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			/	
Do all applicable analyses have duplicate injections? (Level IV only)			/	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			/	
Were analytical spike recoveries within the 85-115% QC limits?			/	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL (ICP/MS)?	/		/	
Were all percent differences (%Ds) < 10%?	/		/	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			/	
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/		/	
If the %Rs were outside the criteria, was a reanalysis performed?			/	
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/	/	
Were the performance evaluation (PE) samples within the acceptance limits?			/	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
XV. Field blanks				
Field blanks were identified in this SDG.		/	/	
Target analytes were detected in the field blanks.			/	

LDC #: 38200342

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Reviewer: OR

2nd reviewer: KK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 3820034

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: 02
2nd Reviewer: KK

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration)	Cu	12.896	12.5	103	103	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV5 (11.24)	ICP/MS (Continuing calibration)	Ni	25.937	25.0	104	104	Y
	CVAA (Continuing calibration)						

Comments:

LDC #:

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

Page: 1 of 1

Reviewer: OK

2nd reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?

Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?

Y/N N/A Are all detection limits below the CRDL?

Detected analyte results for _____ were recalculated and verified using the following equation:

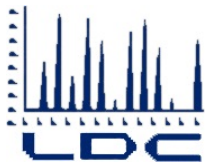
$$\text{Concentration} = \frac{(\text{RD})(\text{FV})(\text{Dil})}{(\text{In. Vol.})}$$

Recalculation:

RD	=	Raw data concentration
FV	=	Final volume (ml)
In. Vol.	=	Initial volume (ml) or weight (G)
Dil	=	Dilution factor

$$\frac{100 \text{ mL} (0.367 \text{ g/L}) (5)}{0.984 (1.01 \text{ g}) (1000)} = 0.1846 \text{ mg/kg}$$
[illegible]

Note: _____



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901
ATTN: (b) (6)

March 17, 2017

SUBJECT: Fort Bliss, Castner Range, Data Validation

Dear (b) (6),

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on March 3, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #38200:

SDG #

Fraction:

K1700744, K1701849 Explosives, Metals, Perchlorate

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas, February 2015
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, 5.0, July 2013
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

(b) (6)

Chemist

L:\Arcadis\Fort Bliss-Castner Range\38200ST.wpd

**Data Validation Report
Fort Bliss, Castner Range**

SDGs: K1700744 and K1700849

Prepared for

Arcadis U.S., Inc.
401 E. Main Street, Suite 400
El Paso, TX 79901

Prepared by

Laboratory Data Consultants, Inc.
2701 Loker Ave West, Suite 220
Carlsbad, CA 92010

March 15, 2017

INTRODUCTION

This Data Validation Report (DVR) presents Level III and Level IV data validation results for samples collected during the January 2017 sampling period. Data validation was performed in accordance with the Final Quality Assurance Project Plan (QAPP), Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Organic Superfund Data Review (October 1999) and the EPA CLPNFG for Inorganic Superfund Data Review (October 2004). Where specific guidance is not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Explosives by Environmental Protection Agency (EPA) SW 846 Method 8330B

Metals by EPA SW 846 Method 6020A

Perchlorate by EPA SW 846 Method 6850

The sample identification and methods of analyses performed on each sample is presented in Attachment 1. Overall data qualification summary is presented in Attachment 2. Level III Automated Data Review outliers are presented in Enclosure I. DVRs for samples on which Level IV validation was performed are presented in Enclosure II.

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results for sample holding times, initial and continuing calibrations, initial and continuing calibration blanks (ICB/CCBs), laboratory blanks, interference check (ICSA and ICSAB) samples, surrogates, matrix spike/matrix spike duplicates (MS/MSD), serial dilutions, laboratory control sample (LCS), internal standards, and field triplicates. Approximately 10 percent of samples were subjected to Level IV evaluation as indicated in Attachment 1, which comprises a review of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

Automated data review was performed on all QC summary results using the Automated Data Review (ADR) software program (LDC, 2013) with exception of the calibrations, calibration blanks, interference check samples, and internal standards, which were validated manually. Quality assurance (QA)/QC criteria specified in the QAPP, DoD QSM and CLPNFGs were incorporated with the program's reference library to assess compliance with project requirements.

The following are definitions of the data qualifiers:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NJ (Presumptive): Presumptive evidence of presence of the compound at an estimated quantity.
- NA (Not applicable): Data did not warrant qualification since detected results only are affected and the compound was not detected in the associated samples.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt & Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

All criteria for the initial calibration and initial calibration verifications of the method were met.

III. Continuing Calibration

All criteria for the continuing calibration verifications of the method were met.

IV. Laboratory Blanks

Laboratory blanks were performed as required by the methods. No contaminant concentrations were detected in the laboratory blanks reviewed by the ADR software with the exception of two blanks for antimony and two blanks for explosives. The sample results were either not detected or were significantly greater (>5x blank contaminants) than the concentrations found in the associated laboratory blank, therefore no data were qualified. The details are presented in Enclosure I.

No contaminant concentrations were detected in the initial or continuing calibration blanks with the following exceptions:

SDG/ Method	Laboratory Blank ID	Analyte	Maximum Concentration	Associated Samples
K1700744/ 6020A	ICB/CCB	Antimony	0.021 ug/L	FTBL-IS-175-012417-A FTBL-IS-175-012417-B FTBL-IS-175-012417-C

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were not detected or were significantly greater than the concentrations found in the associated blanks.

V. Field Blanks

No field blanks were identified in these SDGs.

VI. Surrogates

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Duplicate Sample Analysis/Triplicate Sample Analysis

The laboratory has indicated that there were no laboratory duplicate (DUP) or laboratory triplicate (TRP) analyses specified for the samples in these SDGs, and therefore laboratory duplicate/triplicate analyses were not performed for these SDGs.

X. Serial Dilution

Serial dilution was not performed for these SDGs.

XI. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XII. Field Triplicates

One set of field triplicates were collected and analyzed for metals. All relative standard deviations (RSD)s were within QC limits. The field triplicate result comparisons are provided in Enclosure I.

XIII. Compound Quantitation

The laboratory reporting limits were evaluated. All laboratory reporting limits met the specified requirements.

All compounds reported below the LOQ as detected by the laboratory were qualified as detected estimated (J). The details regarding the qualification of data are provided in Enclosure I.

All compound quantitations were within validation criteria with the following exceptions:

SDG/ Method	Sample	Compound	Finding	Criteria	Flag	A or P
K1700849/ 8330B	FTBL-IS-166-012717	Nitrobenzene 2,4-Dinitrotoluene	2 nd column confirmation was not performed for this compound.	2 nd column confirmation should be performed for all detected results	NJ (all detects)	A

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to results not being confirmed, data were qualified as presumptive in one sample.

The quality control criteria reviewed, as discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation, all other results are considered valid and usable for all purposes.

Data flags are summarized and are presented as Attachment 2.

Attachment 1
Sample Cross Reference

Sample Cross Reference

Date Collected	Field Sample ID	Lab Sample ID	Sample Type	Prep Method	Analytical Method	Review Level
24-Jan-2017	FTBL-IS-174-012417	K1700744-001	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-174-012417	K1700744-001	N	EPA 3535A	8330B	III
24-Jan-2017	FTBL-IS-174-012417	K1700744-001	N	METHOD	6850	III
24-Jan-2017	FTBL-IS-174-012417RE	K1700744-001RE	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-174-012417MS	KQ1701598-03	MS	METHOD	6850	III
24-Jan-2017	FTBL-IS-174-012417MSD	KQ1701598-04	MSD	METHOD	6850	III
24-Jan-2017	FTBL-IS-175-012417-A	K1700744-002	FT	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-175-012417-B	K1700744-003	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-175-012417-C	K1700744-004	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-172-012417	K1700744-005	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-181-012417	K1700744-006	N	EPA 3050B	6020A	III
24-Jan-2017	FTBL-IS-177-012417	K1700744-007	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-167-012717	K1700849-001	N	EPA 3050B	6020A	IV
27-Jan-2017	FTBL-IS-166-012717	K1700849-002	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-166-012717	K1700849-002	N	EPA 3535A	8330B	III
27-Jan-2017	FTBL-IS-164-012717	K1700849-003	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-160-012717	K1700849-004	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-162-012717	K1700849-005	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-161-012717	K1700849-006	N	EPA 3050B	6020A	III
27-Jan-2017	FTBL-IS-163-012717	K1700849-007	N	EPA 3050B	6020A	III

III = EPA Level 3 Data Review
IV = EPA Level 4 Data Validation

N = Normal Sample
FD = Field Duplicate

TB = Trip Blank
FB = Field Blank

MS = Matrix Spike
MSD = Matrix Spike Duplicate

Attachment 2
Overall Data Qualification Summary

Data Qualifier Summary

Lab Reporting Batch ID: K1700744, K1700849

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A, K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

SDG: K1700849

Method Category: SVOA

Method: 8330B

Matrix: Soil

Sample ID: FTBL-IS-166-012717

1/27/2017 9:55:00
Collected: AM

Analysis Type: Initial2

Dilution: 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NITROBENZENE	0.0092	JN	0.021	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg
2,4-DINITROTOLUENE	0.072	JN	0.081	LOD	0.081	LOQ	mg/Kg	NJ	RI, ProfJudg

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:44:25 AM

ADR version 1.9.0.325

Page 1 of 2

Data Qualifier Summary

Lab Reporting Batch ID: K1700744, K1700849

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A, K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Reason Code Legend

<i>Reason Code</i>	<i>Description</i>
Mb	Method Blank Contamination
ProfJudg	Professional Judgment
RI	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:44:25 AM

ADR version 1.9.0.325

Page 2 of 2

Enclosure I

Level III ADR Outliers

(Including Manual Review Outliers)

Quality Control Outlier Reports

K1700744

Method Blank Outlier Report

Lab Reporting Batch ID: K1700744

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KQ1701038-03RE	2/6/2017 7:11:00 AM	ANTIMONY	0.011 mg/Kg	FTBL-IS-174-012417 FTBL-IS-174-012417RE
KQ1701094-01	2/6/2017 8:57:00 AM	ANTIMONY	0.021 mg/Kg	FTBL-IS-172-012417 FTBL-IS-175-012417-A FTBL-IS-175-012417-B FTBL-IS-175-012417-C FTBL-IS-177-012417 FTBL-IS-181-012417

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1700911-8	2/10/2017 12:52:00 PM	1,3-DINITROBENZENE 3-NITROTOLUENE	0.013 mg/Kg 0.023 mg/Kg	FTBL-IS-174-012417

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:35:54 AM

ADR version 1.9.0.325

Page 1 of 1

Field Triplicate RSD Report

Lab Reporting Batch ID: K1700744

Laboratory: ALS_K

EDD Filename: K1700744_SEDD2A_rev

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 6020A

Matrix: Soil

Analyte	Concentration (mg/Kg)			Sample RSD/RPD	eQAPP RSD/RPD	Flag
	FTBL- IS-175-012417-A	FTBL- IS-175-012417-B	FTBL- IS-175-012417-C			
ANTIMONY	0.224	0.200	0.213	5.66	20.00	No Qualifiers Applied
ARSENIC	5.14	7.04	5.07	19.44	20.00	
BERYLLIUM	1.96	1.89	1.74	6.03	20.00	
COPPER	14.5	11.9	13.7	9.96	20.00	
LEAD	32.5	30.3	31.2	3.53	20.00	
NICKEL	5.37	4.81	5.73	8.74	20.00	
ZINC	69.3	63.8	62.6	5.48	20.00	

* - RPD was calculated and compared against library RPD because only two samples among the triplicate set had detected results.
NC - (Not Calculated) is reported if only one sample among the triplicate set has a detected result.

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/15/2017 10:51:56 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38200A4a
 SDG #: K1700744
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/13/17
 Page: 1 of 1
 Reviewer: KK
 2nd Reviewer: CR

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/N	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	ICB/CCB only
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	(from K1700699)
VIII.	Duplicate sample analysis	N	Reax
IX.	Serial Dilution	AN	
X.	Laboratory control samples	N	
XI.	Field Duplicates / Triplicate	-	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-174-012417	K1700744-001	Soil	01/24/17
2	FTBL-IS-175-012417-A	K1700744-002	Soil	01/24/17
3	FTBL-IS-175-012417-B	K1700744-003	Soil	01/24/17
4	FTBL-IS-175-012417-C	K1700744-004	Soil	01/24/17
5	FTBL-IS-172-012417	K1700744-005	Soil	01/24/17
6	FTBL-IS-181-012417	K1700744-006	Soil	01/24/17
7	FTBL-IS-177-012417	K1700744-007	Soil	01/24/17
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 38200 A

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: ISK

2nd reviewer: ca

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 38200A4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1

Reviewer: KK

2nd Reviewer: a**METHOD:** Trace metals (EPA SW 864 Method 6010B/6020/7000)

Soil preparation factor applied: 100x x 5xdil

Sample Concentration units, unless otherwise noted: mg/Kg

Associated Samples: 2 -4

				Sample Identification										
Analyte	Maximum PB ^a (ug/l)	Maximum ICB/CCB ^a (ug/l)	Action Level	No qualifiers (≥5x)										
Sb		0.021	0.0525											

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 38200A40
 SDG #: K1700744
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/10/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	1570 - 1CV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable
 N = Not provided/applicable
 SW = See worksheet

ND = No compounds detected
 R = Rinsate
 FB = Field blank

D = Duplicate
 TB = Trip blank
 EB = Equipment blank

SB=Source blank
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-174-012417	K1700744-001	Soil	01/24/17
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Notes:

LDC #: 38200A87

VALIDATION COMPLETENESS WORKSHEET

SDG #: K1700744

ADR

Laboratory: ALS Environmental

Date: 3/19/17

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: LC/MS Perchlorate (EPA SW846 Method 6850)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	#1 = 29 day (HT = 28 day) = 9
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	A, A	2SD ≤ 1570 ICV ≤ 1570
IV.	Continuing calibration	A	CCV ≤ 1570
V.	Laboratory Blanks	N	
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	N	
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-174-012417	K1700744-001	Soil	01/24/17
2	FTBL-IS-174-012417MS	K1700744-001MS	Soil	01/24/17
3	FTBL-IS-174-012417MSD	K1700744-001MSD	Soil	01/24/17
4				
5				
6				
7				
8				

Notes:

Quality Control Outlier Reports

K1700849

Method Blank Outlier Report

Lab Reporting Batch ID: K1700849

Laboratory: ALS_K

EDD Filename: K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
KWG1700911-9	2/10/2017 1:29:00 PM	1,3-DINITROBENZENE 3-NITROTOLUENE HMX	0.071 mg/Kg 0.032 mg/Kg 0.23 mg/Kg	FTBL-IS-166-012717

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:36:03 AM

ADR version 1.9.0.325

Page 1 of 1

Reporting Limit Outliers

Lab Reporting Batch ID: K1700849

Laboratory: ALS_K

EDD Filename: K1700849_SEDD2A

eQAPP Name: Arcadis_FtBliss_ALS_160627

Method: 8330B

Matrix: Soil

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
FTBL-IS-166-012717	2,4-DINITROTOLUENE NITROBENZENE	JN	0.072	0.081	LOQ	mg/Kg	J (all detects)
		JN	0.0092	0.081	LOQ	mg/Kg	

Project Name and Number: 06261038.0001.00400 - Closed Castner Firing Range

3/14/2017 9:36:05 AM

ADR version 1.9.0.325

Page 1 of 1

LDC #: 38200B4a
 SDG #: K1700849
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 3/14/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. CS
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-167-012717**	K1700849-001**	Soil	01/27/17
2	FTBL-IS-166-012717	K1700849-002	Soil	01/27/17
3	FTBL-IS-164-012717	K1700849-003	Soil	01/27/17
4	FTBL-IS-160-012717	K1700849-004	Soil	01/27/17
5	FTBL-IS-162-012717	K1700849-005	Soil	01/27/17
6	FTBL-IS-161-012717	K1700849-006	Soil	01/27/17
7	FTBL-IS-163-012717	K1700849-007	Soil	01/27/17
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 38200342

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Page: 1 of 1

Reviewer: OR

2nd reviewer: LRK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 38200B40
 SDG #: K1700849
 Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET ADR

Date: 3/10/17
 Page: 1 of 1
 Reviewer: [Signature]
 2nd Reviewer: KR

METHOD: HPLC Explosives (EPA SW 846 Method 8330B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A/A	RSD ≤ 15%. 1 CV ≤ 20%
III.	Continuing calibration	A	CCV ≤ 20%
IV.	Laboratory Blanks	N	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	N	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	SN	
XI.	Target compound identification	N	
XII.	Overall assessment of data	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
 N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
 SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-166-012717	K1700849-002	Soil	01/27/17
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

Notes:

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensulfothion	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	W. Bolstar	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	X. EPN	EE. Ethylbenzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyl	SSS. o-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. m,p-Xylenes
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA. Parathion	GG. Total xylenes
G. Benzo(g,h,i)perylene	G. 2,4,6-Trinitrotoluene	G. Dicamba	G. Sulfotepp	BB. Famphur	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Phosmet	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	Krone
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	A. Tetra-n-butyltin
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinphos	B. Tri-n-butyltin Cation
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	C. Di-n-butyltin Cation
O. Phenanthrene	O.		O. Chlorpyrifos		D. N-Butyltin Cation
P. Pyrene	P.		P. Fenthion		
Q.	Q.		Q. Parathion-ethyl		
R.	R.		R. Trichloronate		
S.			S. Merphos		
			T. Stirophos		
			U. Tokuthion		

Notes: _____

LDC #: 38200B40

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and Reported CRQLs

Page: 1 of 1

Reviewer: 9

2nd Reviewer: KK

METHOD: GC ✓ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N / N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

Y	N	N/A	Did the relative percent differences of detected compounds between two columns/detectors $\leq 40\%$?
---	---	-----	--

If no, please see findings bellow.

[illegible]

Comments: See sample calculation verification worksheet for recalculations

Enclosure II
Level IV Data Validation Reports

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Fort Bliss, Castner Range

LDC Report Date: March 15, 2017

Parameters: Metals

Validation Level: Level IV

Laboratory: ALS Environmental

Sample Delivery Group (SDG): K1700849

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FTBL-IS-167-012717	K1700849-001	Soil	01/27/17

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Quality Assurance Project Plan, Military Munitions Response Program Remedial Investigation, Closed Castner Firing Range, Fort Bliss, El Paso, Texas (February 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (October 2004). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Antimony, Arsenic, Beryllium, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**Fort Bliss, Castner Range
Metals - Data Qualification Summary - SDG K1700849**

No Sample Data Qualified in this SDG

**Fort Bliss, Castner Range
Metals - Laboratory Blank Data Qualification Summary - SDG K1700849**

No Sample Data Qualified in this SDG

**Fort Bliss, Castner Range
Metals - Field Blank Data Qualification Summary - SDG K1700849**

No Sample Data Qualified in this SDG

LDC #: 38200B4a
SDG #: K1700849
Laboratory: ALS Environmental

VALIDATION COMPLETENESS WORKSHEET

ADR/IV

Date: 3/14/17
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	Not reviewed for ADR validation.
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	ICB/CCB only
VI.	Field Blanks	N	Not reviewed for ADR validation.
VII.	Matrix Spike/Matrix Spike Duplicates	N	Not reviewed for ADR validation. CS
VIII.	Duplicate sample analysis	N	Not reviewed for ADR validation.
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	Not reviewed for ADR validation. LCS
XI.	Field Duplicates	N	Not reviewed for ADR validation.
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	Not reviewed for ADR validation.
XIV.	Overall Assessment of Data	A	Not reviewed for ADR validation.

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

** Indicates sample was underwent Level IV review

	Client ID	Lab ID	Matrix	Date
1	FTBL-IS-167-012717**	K1700849-001**	Soil	01/27/17
2	FTBL-IS-166-012717	K1700849-002	Soil	01/27/17
3	FTBL-IS-164-012717	K1700849-003	Soil	01/27/17
4	FTBL-IS-160-012717	K1700849-004	Soil	01/27/17
5	FTBL-IS-162-012717	K1700849-005	Soil	01/27/17
6	FTBL-IS-161-012717	K1700849-006	Soil	01/27/17
7	FTBL-IS-163-012717	K1700849-007	Soil	01/27/17
8				
9				
10				
11				
12				
13				

Notes:

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	/			
Were %RSD of isotopes in the tuning solution $\leq 5\%$?				
III. Calibration				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	/			
Were all initial calibration correlation coefficients ≥ 0.995 ?	/			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	/			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?				
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.			/	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			/	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm 2X$ RL ($\pm 2X$ RL for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.			/	
VII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	/			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			/	
Do all applicable analyses have duplicate injections? (Level IV only)			/	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			/	
Were analytical spike recoveries within the 85-115% QC limits?			/	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	/	/	/	
Were all percent differences (%Ds) < 10%?			/	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			/	
X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	/			
If the %Rs were outside the criteria, was a reanalysis performed?			/	
XI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
XII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
XV. Field blanks				
Field blanks were identified in this SDG.		/	/	
Target analytes were detected in the field blanks.			/	

LDC #: 38200342

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Reviewer: OR

2nd reviewer: UK

All circled elements are applicable to each sample.

[illegible]

Comments: Mercury by CVAA if performed

LDC #: 3820034

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: 02
2nd Reviewer: KK

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration)	Cu	12.896	12.5	103	103	Y
	CVAA (Initial calibration)						
	ICP (Continuing calibration)						
CCV5 (11.24)	ICP/MS (Continuing calibration)	Ni	25.937	25.0	104	104	Y
	CVAA (Continuing calibration)						

Comments:

LDC #: 3500B4**VALIDATION FINDINGS WORKSHEET**
Level IV Recalculation WorksheetPage: 1 of 1
Reviewer: CR
2nd Reviewer: KIK**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation,
Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
ICSAB	ICP interference check	Zn	20.146	25.0	81	81	Y
LCS	Laboratory control sample	Be	94.82	100.0	95	95	Y
N	Matrix spike		(SSR-SR)				
N	Duplicate						
N	ICP serial dilution						

Comments: _____

LDC #:

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

Page: 1 of 1

Reviewer: OK

2nd reviewer: KK

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?

Y	N	N/A	Are results within the calibrated range of the instruments and within the linear range of the ICP?

Y/N	N/A	Are all detection limits below the CRDL?

Detected analyte results for _____ were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(\text{RD})(\text{FV})(\text{Dil})}{(\text{In. Vol.})}$$

Recalculation:

RD	=	Raw data concentration
FV	=	Final volume (ml)
In. Vol.	=	Initial volume (ml) or weight (G)
Dil	=	Dilution factor

Calculation:

$$\frac{100 \text{ mL} (0.367 \text{ g/L}) (5)}{0.984 (1.01 \text{ g}) (1000)} = 0.1846 \text{ mg/kg}$$
[illegible]

Note: _____